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PB-299 330

Greensboro-Guilford County, North Carolina Horsepen Creek Interceptor EPA Project No. C370369-01

(U.S.) Environmental Protection Agency, Atlanta, GA Region IV

Aug 79

PB 299330

EPA 904/9-79-042
August 1979

United States
Environmental Protection
Agency

Region 4
345 Courtland Street, NE
Atlanta, GA 30308

EPA

Environmental Impact Statement
Final

Greensboro-Guilford County, North Carolina
Horsepen Creek Interceptor
EPA Project No. C370369-01

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BIBLIOGRAPHIC DATA SHEET	1. Report No. EPA 904/9-79-042	2.	3. Recipient's Accession No. PB299330

4. Title and Subtitle
Final EIS Greensboro-Guilford County, N.C. Horsepen Creek Interceptor EPA Project No. C370369-01

5. Report Date
August 1979

6.

7. Author(s)
EIS Preparation Section, EPA, Atlanta, GA

8. Performing Organization Rept. No.

9. Performing Organization Name and Address
U.S. E.P.A. EIS Branch
345 Courtland Street
Atlanta, GA 30308

10. Project/Task/Work Unit No.

11. Contract/Grant No.

12. Sponsoring Organization Name and Address
Same as above

13. Type of Report & Period Covered
FINAL

14.

15. Supplementary Notes

16. Abstracts

This Environmental Impact Statement (EIS) was prepared in response to the proposed action of awarding grant funds to Guilford County, North Carolina for the purpose of developing a wastewater treatment system to service the Greensboro-Guilford area of which the Horsepen creek Interceptor is a part. The project consists of the necessary facilities to transport wastewater from the Horsepen Creek basin to the City of Greensboro wastewater collection system for treatment. The EIS provides an inventory of existing conditions in the area, develops and evaluates alternatives for the provision of wastewater facilities, describes the selected alternative, and provides a discussion of unavoidable adverse impacts and potential mitigative measures. The major issue addressed in the EIS is the potential impact of growth induced in the EIS provision of wastewater facilities on water quality in Lake Brandt which is a major source of drinking water for the City of Greensboro.

17. Key Words and Document Analysis. 17a. Descriptors

Greensboro, N.C.
Horsepen Creek Interceptor
grant funds
Guilford Co., N.C.

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 264
	20. Security Class (This Page UNCLASSIFIED	22. Price PC A12 / MF A01

FINAL ENVIRONMENTAL IMPACT STATEMENT

GREENSBORO-GUILFORD COUNTY, NORTH CAROLINA
HORSEPEN CREEK INTERCEPTOR
EPA PROJECT NO. C370369-01

Prepared by
Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Approved

John C. White 7/26/79
Regional Administrator Date

In cooperation with
the State of North Carolina
Department of Natural Resources
and
Community Development
Raleigh, North Carolina 27611

Approved

7-17-79
Secretary Date

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SUMMARY SHEET FOR ENVIRONMENTAL IMPACT STATEMENT

Greensboro-Guilford County, North Carolina
Horsepen Creek Interceptor
Project No. C-37036901

Draft ( )
Final (X)

Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30308

1. Type of Action: Administrative Action (X)
Legislative ( )

2. Brief Description of Proposed Action:

. This Environmental Impact Statement was prepared in response to the proposed action of awarding grant funds to Guilford County, North Carolina for the purpose of developing a wastewater treatment system to service the Greensboro-Guilford County area of which the Horsepen Creek Interceptor is a part. The project consists of the necessary facilities to transport wastewater from the Horsepen Creek basin to the City of Greensboro wastewater collection system for treatment. All of the Horsepen Creek watershed and Lake Brandt, both of which are located entirely in Guilford County, North Carolina, will be potentially affected by the proposed action.

Physically, the proposed action consists of abandoning all lift stations in the Horsepen Creek basin except the Albert Pick lift station; construction of the Horsepen Creek interceptor and collectors running to the abandoned lift stations; construction of a new lift station and force main near U.S. Highway 220 to transfer Horsepen Creek interceptor wastewater to the North Buffalo Creek (NBC) collection system, and construction of a new force main from the Albert Pick lift station to transfer Deep River tributary wastewater to a new outfall discharging to the South Buffalo Creek (SBC) collection system. All lines are sized to serve the existing population in the Horsepen Creek basin.

The proposed action will provide for:

(1) the elimination of the present system of lift stations and force mains in the area,

(2) a new collection system providing for transfer of existing wastewater flows in Horsepen Creek basin to the City of Greensboro wastewater collection system, and

(3) sewering of areas with failing septic tanks.

3. Summary of Major Environmental Impacts

Direct adverse impacts associated with the proposed action are minor. Construction of the interceptor system will cause short-term, minor stream siltation and increased airborne particulates. Some natural vegetation will also be destroyed, continuing a trend to habitat fragmentation. Certain individuals will be subjected to temporary noise levels that exceed acceptable thresholds. Low density development with widespread septic tank use, as opposed to high density development with full sanitary sewerage, will be promoted. This will tend to lessen the deleterious effects of urban runoff on Horsepen Creek and ultimately on Lake Brandt. Likewise, the proposed action will encourage adequate growth management planning measures be adopted and current regulations be strictly enforced by local officials. This is necessary to ensure that contamination of the City of Greensboro's water supply in Lake Brandt does not occur as a result of expected growth in the Horsepen Creek watershed.

Significant adverse secondary impacts include an unavoidable lowering of water quality in Horsepen Creek due to urbanization. These potential impacts would be much more severe under the future service alternative than under the chosen action which limits growth in the area to low density septic tank development. Land use changes accompanying increased urbanization will virtually eliminate farmland and forested areas in the basin, and reduced sediment loads to Horsepen Creek may promote eutrophication in Lake Brandt. Concentrations of pollutants in stormwater runoff, especially lead, will increase as urbanization of the basin occurs, which may result in unacceptably high levels of pollutants in Lake Brandt. Arsenic levels may increase as well if its concentration in Lake Brandt is dependent on pH of inflowing waters.

Major beneficial impacts include elimination of the present system of lift stations and force mains in the basin which have occasionally surcharged in the past. Many poorly designed or malfunctioning septic tank systems in current use will be eliminated. Finally, this project will promote the development of planning measures for orderly urban growth in the Horsepen Creek basin which are necessary to protect the City of Greensboro's water supply in Lake Brandt.

4. Summary of Alternatives Considered

The EIS process identified six (6) system alternatives for this project. These alternatives were subjected to a multilevel evaluation process (involving environmental, engineering, legal and cost constraints) and inputs from the Greensboro-Horspen Creek EIS Advisory Committee. Alternatives 1 through 4 can be sized to serve either existing or future development.

Alternative 1 - abandon all lift stations in Horsepen Creek basin except Albert Pick lift station; construction of Horsepen Creek (HC) interceptor and collection lines to abandoned lift stations; construction of new lift station and force main near U.S. Highway 220 to transfer wastewater from HC interceptor to North Buffalo Creek (NBC) collection system.

Alternative 2 - abandon all lift stations in HC basin except Albert Pick lift station; construction of HC interceptor and collection lines to abandoned lift stations; construction of a new force main from Albert Pick lift station to new outfall discharging to South Buffalo Creek (SBC) collection system; construction of new lift station and force main near U.S. Highway 220 to transfer HC interceptor wastewater to NBC collection system.

Alternative 3 - abandon all lift stations in the HC basin except Stage Coach Trail, Wagon Wheel, and Albert Pick lift stations; Stage Coach Trail lift station will transfer wastewater to SBC collection system; construction of HC interceptor from Fleming Road-New Garden Road intersection to U.S. Highway 220 and collection lines to abandoned lift stations; construction of new lift station and force main near U.S. Highway 220 to transfer HC interceptor wastewater to NBC collection system.

Alternative 4 - abandon all lift stations in HC basin except Stage Coach Trail, Wagon Wheel, and Albert Pick lift stations; Stage Coach Trail lift station will transfer wastewater to SBC collection system; construction of new force main from Albert Pick lift station to new outfall discharging to SBC collection system; construction of HC interceptor from Fleming Road-New Garden Road intersection to U.S. Highway 220 and collection lines to abandoned lift stations; construction of new lift station and force main near U.S. Highway 220 to transfer HC interceptor wastewater to NBC collection system.

Alternative 5 - No Action - maintain existing HC collection system; new wastewater sources in excess of capacity must be accommodated by septic tank systems.

Alternative 6 - Modified No Action - construction of new force main from Albert Pick lift station to new outfall discharging to SBC collection system; existing HC collection system will be maintained and operated with the addition of standby power.

5. Comments on the Draft Statement Were Received From the Following:

Federal Agencies

Army Corps of Engineers
Department of the Interior
Department of Health, Education, and Welfare
Federal Energy Regulatory Agency
United States Department of Agriculture

State

North Carolina Division of Policy Development

Local

Superintendent of Schools: Guilford County
Mayor: Greensboro
Assistant Director of Public Works: Greensboro
Advisory Board for Environmental Quality: Guilford County
Commissioner: Guilford County
Chairman of the Board: Guilford County Commissioners
Guilford County Soil and Water Conservation District
Greensboro-High Point Airport Authority

Interested Groups

Audubon Society: T. Gilbert Pearson Chapter
Sierra Club: Joseph Le Conte Chapter
Environmental Action Coalition
Greensboro Chamber of Commerce
Board of Realtors
League of Women Voters
Greensboro-High Point Homebuilders Association

Individuals

Jack Jezorek
Mazie J. Levenson
R.H. Souther

6. Data Made Available to OER and the Public

The Final Environmental Impact Statement was made available to OER and the Public in August 1979.

1.0 INTRODUCTION

This Final Environmental Impact Statement (FEIS) for Greensboro-Guilford County, North Carolina, Horsepen Creek interceptor supplements the Draft EIS (DEIS) issued in September, 1978. The FEIS has been prepared in accordance with the Council on Environmental Quality (CEQ) Guidelines, at 40 CFR 1500, and with EPA's 40 CFR 6 and requirements of the North Carolina Department of Natural Resources and Community Development (DNRCD). The FEIS fulfills the agencies' responsibilities under the National Environmental Policy Act (PL 91-190) and the North Carolina Environmental Policy Act of 1972 and EPA's regulations for environmental review Section 306 of construction grant applications. While this summary document is intended to be comprehensive, the supporting information furnished with the Draft EIS (RA-R-671) should be reviewed and is incorporated here by reference.

This FEIS contains four major items of information. The first is Chapter 2 which contains a summary of the detailed environmental analysis conducted for the DEIS. The second item, a description of the more significant recent revisions and additions to the information base on which the agencies' decision was founded, is included as Chapter 3. (This chapter deals with the substantive issues only, and is not intended to be a compilation of corrections of typographical and other recognized minor errors.) Chapter 4 presents the responses to public review and comments on the DEIS. Copies of written communications and the transcript of the public hearing are presented in Appendixes A and B. Lastly Chapter 5 describes the final agency decision and its rationale and includes the conditons required for Step 2 of the construction grants process.

1

In accordance with the regulations, a thirty-day review and comment period will exist after publication of this Final EIS and its filing with the OER. A conditional construction grant offer to Guilford County for funding Step 2 (detailed engineering) of the proposed action described below is intended after this public review period. Anyone receiving this document who has not received a copy of the Draft may request one from:

Mr. John E. Hagan, Chief
Environmental Impact Statement Branch
Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30308

2.0 ENVIRONMENTAL EVALUATION

The detailed environmental analysis conducted for the Draft EIS (RA-R-671) is summarized here to set the context for the remainder of the Final EIS.

2.1 Existing Environment

For the purposes of this Environmental Impact Statement (EIS), the study area includes all of the Horsepen Creek basin, as shown in Figure 2-1. The total environment is divided into natural and man-made aspects and each, while interactive, is discussed separately. Supporting documentation is provided in a Technical Reference Document (RA-R-507) and the Greensboro Draft EIS (EN-R-618).

2.1.1 Natural Environment

The Horsepen Creek basin area has a temperate climate with short, mild winters and long, hot summers. Precipitation is abundant.

Air pollutant emissions of the adjacent Greensboro area are typical of a moderately industrialized urban region. The general quality of the Greensboro area is good with respect to criteria pollutants. Guilford County has been designated an Air Quality Maintenance Area for suspended particulates.

Community-wide odor problems do not exist in the Horsepen Creek basin.

The noise climate of the study area is typical of similar suburban areas in the United States. Residential areas are

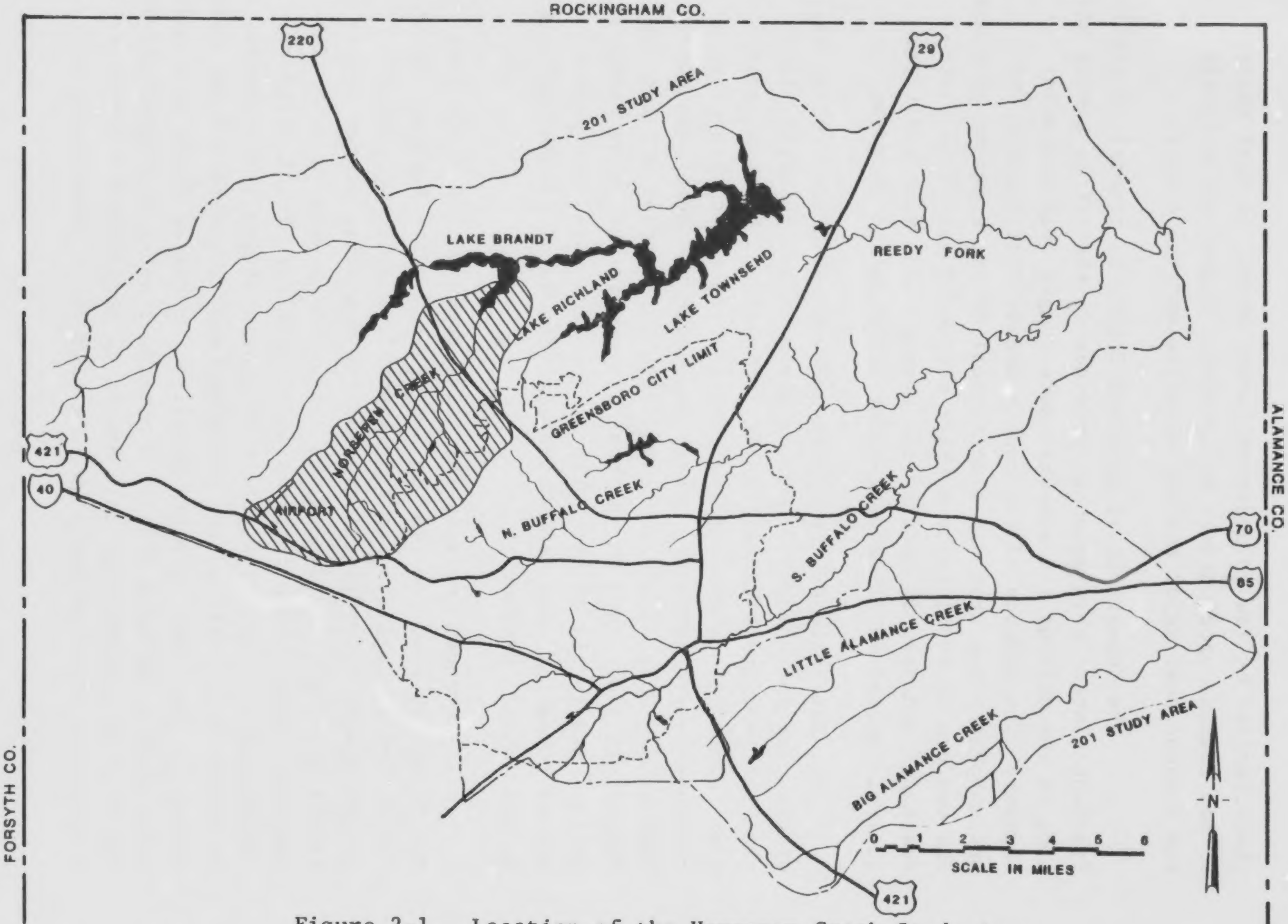

ROCKINGHAM CO.
ALAMANCE CO.
FORSYTH CO.
220
29
421
40
70
85
421
201 STUDY AREA
LAKE BRANDT
LAKE RICHLAND
LAKE TOWNSEND
REEDY FORK
GREENSBORO CITY LIMIT
HORSEPEN CREEK
AIRPORT
N. BUFFALO CREEK
S. BUFFALO CREEK
LITTLE ALAMANCE CREEK
BIG ALAMANCE CREEK
201 STUDY AREA
0 1 2 3 4 5 6
SCALE IN MILES
N

Figure 2-1. Location of the Horsepen Creek Study Area

characterized by low to moderate levels which, in most cases, do not intrude upon outdoor activities. Higher noise levels are present near major traffic arteries and the airport.

The topography of Guilford County is typical of the Piedmont Plateau physiographic province in that it is gently rolling in the uplands and somewhat more rugged near the major streams. The bedrock of the county consists of igneous and metamorphic rocks that are also typical of the Piedmont province. The bedrock is overlain by a thick mantle of saprolite (soft, weathered bedrock) in most of the county. The most important geologic processes are ground-water recharge and flooding.

The soils of the Horsepen Creek basin are typical soils of the piedmont uplands. Surface horizons are generally less than one foot in thickness and are composed of brown or sandy loam. Subsoils consist of red clay and are two to four feet in thickness. The soils are mostly developed on deeply weathered saprolite. Most of the Horsepen Creek soil series outside the floodplain areas have phases that are considered prime farmland soils. Nearly all of the soils in the study area are poorly suited to septic tank use, primarily because of low permeability in the subsoil horizon.

Horsepen Creek is the only stream in the study area. The 7-day, 10-year low flow is less than 2 cubic feet per second (cfs), and average flow is approxiamtely 17 cfs. Biological oxygen demand (BOD) levels are low and dissolved oxygen (DO) levels are high, indicating the current high water quality in Horsepen Creek. Some problems exist with high fecal coliform levels possibly due to septic tank contamination. The stream is presently classified for drinking water use with a Class A-II rating by the State of North Carolina. Horsepen Creek is a major water supply for Lake Brandt, a municipal water use reservoir for the City of Greensboro. Lake Brandt is considered moderately eutrophic. High turbidity which limits light penetration is probably responsible for preventing the growth of aquatic macrophytes or nuisance algal blooms, since adequate nutrient concentrations for excessive growth of aquatic flora are present in the lake. Preservation of Horsepen Creek water quality is widely perceived as a necessity in order to protect the Greensboro water supply in Lake Brandt.

Because of the geologic setting of Guilford County, major regional aquifers do not exist. However, shallow, low-productivity water-table aquifers are present and serve as important water sources in rural areas. The ground water of these aquifers occurs in pore spaces in the saprolite and in fractures in the underlying bedrock. Recharge to the aquifers occurs in the uplands, and discharge is to wells or as baseflow to the streams. The total ground water available in the county is estimated to be about 150 MGD, but only approximately 11 MGD is presently being used. Ground-water quality is generally good, except for a high iron content in some areas. Ground-water quality problems from septic tanks have been reported in the county.

The potential natural vegetation in the Horsepen Creek area is a climax hardwood forest. Man's use of the area has resulted in the establishment of a mixed oak-hickory-pine forest type which is now fragmented by cultivated fields, old fields, and urban areas. No virgin woodlands remain. About 38 percent of the total land in the study area is forested with second growth woodlands in various stages of succession.

Because man's use of the study area has fragmented the natural vegetation, forest species have decreased while species preferring disturbed habitats have increased. Small game animals and game birds have benefitted from fragmentation of the woodlands. Other game animals such as whitetail deer and wild turkey have been practically eliminated. Species tolerant of or especially adapted to man's alterations in natural conditions are generally characteristic of the area's fauna.

Sport fishing is restricted to Lake Brandt in the study area; habitat adequate for game fish in Horsepen Creek is probably restricted to a few small pools. However, benthic invertebrates are numerous and diverse in Horsepen Creek. The freshwater marsh in the Lake Brandt headwaters represents a unique habitat in the study area and is considered particularly sensitive to development.

No virgin woodland stands remain in the study area. Three plant species are listed as "threatened" throughout their range in North Carolina. The southern rain orchid (*Habenaria flava*), Nestronia (*Nestronia umbellula*), and ginseng are all moist lowland species. None of the mammals of Guilford County are considered endangered. The Bald Eagle once nested in the area and the Peregrine Falcon migrates through the region. Both are considered endangered by the U.S. Fish and Wildlife Service. The sharp-shinned hawk is considered threatened and is reported to nest near Lake Brandt. Species which are sensitive in the area because they are relictual populations or occur at the edge of their range include the white-crowned sparrow, crescent shiner, and an unidentified species of freshwater clam.

2.1.2 Man-Made Environment

The Horsepen Creek study area had an estimated 13,830 people in 1979 and is projected to have 18,700 in 2000. The land use pattern is a mixture of low-density suburban development along the eastern boundary, commercial, and industrial in the southwestern portion, and agricultural and forest land along the western boundary.

The Greensboro area economy has grown since 1970 with 20,000 jobs created in Guilford County from 1970 to 1974. Unemployment has been low in recent years (normally under four percent). Manufacturing dominates the employment structure with textile employment being conspicuously important. Employment in manufacturing sectors such as wholesale/retail trade and services has grown in recent years.

Greensboro and Guilford County are providing police and fire protection, health care, education, waste disposal, libraries, and other public services that are essential. Greensboro and Guilford County are financially sound governments, paying for their needs with very little bonding required.

The Guilford County area has a rich cultural heritage which is being enhanced and protected. National Register historic sites are located in Greensboro and many buildings and areas of historic value have been identified. Also, the area may have archaeological resources, but they are not well known at this time. Recreational resources are scattered throughout the city and county.

As a focal point of North Carolina highways, Greensboro's major thoroughfares are heavily used. Thoroughfares are planned to relieve excess traffic loads as they develop, especially in peripheral areas.

Duke Power Company will be able to meet the area's energy requirements through the year 2000 as long as coal and nuclear fuels are available. No major natural resources are being extracted in the study area.

2.2 System Alternatives

All system alternatives were developed with the assumption that an additional 4,870 people will move into the Horsepen Creek basin over the next 20 years providing sanitary sewerage is available. A total of six alternatives were considered, including "No Action" and a "Modified No Action" scheme. These alternatives were tested in a multilevel screening process involving environmental, engineering, legal and cost constraints, and inputs from the Greensboro-Horsepen Creek EIS Advisory Committee. A summary of these alternatives follows. Alternatives 1 through 4 can be sized to serve either existing or future development.

Alternative 1 - abandon all lift stations in Horsepen Creek basin except Albert Pick lift station; construction of Horsepen Creek (HC) interceptor and collection lines to abandoned lift stations; construction of new lift station and force main near U.S. Highway 220 to transfer wastewater from HC interceptor to North Buffalo Creek (NBC) collection system (see Figure 2-2).

Alternative 2 - abandon all lift stations in HC basin except Albert Pick lift station; construction of HC interceptor and collection lines to abandoned lift stations; construction of a new force main from Albert Pick lift station to new outfall discharging to South Buffalo Creek (SBC) collection system; construction of new lift station and force main near U.S. Highway 220 to transfer HC interceptor wastewater to NBC collection system (see Figure 2-3).

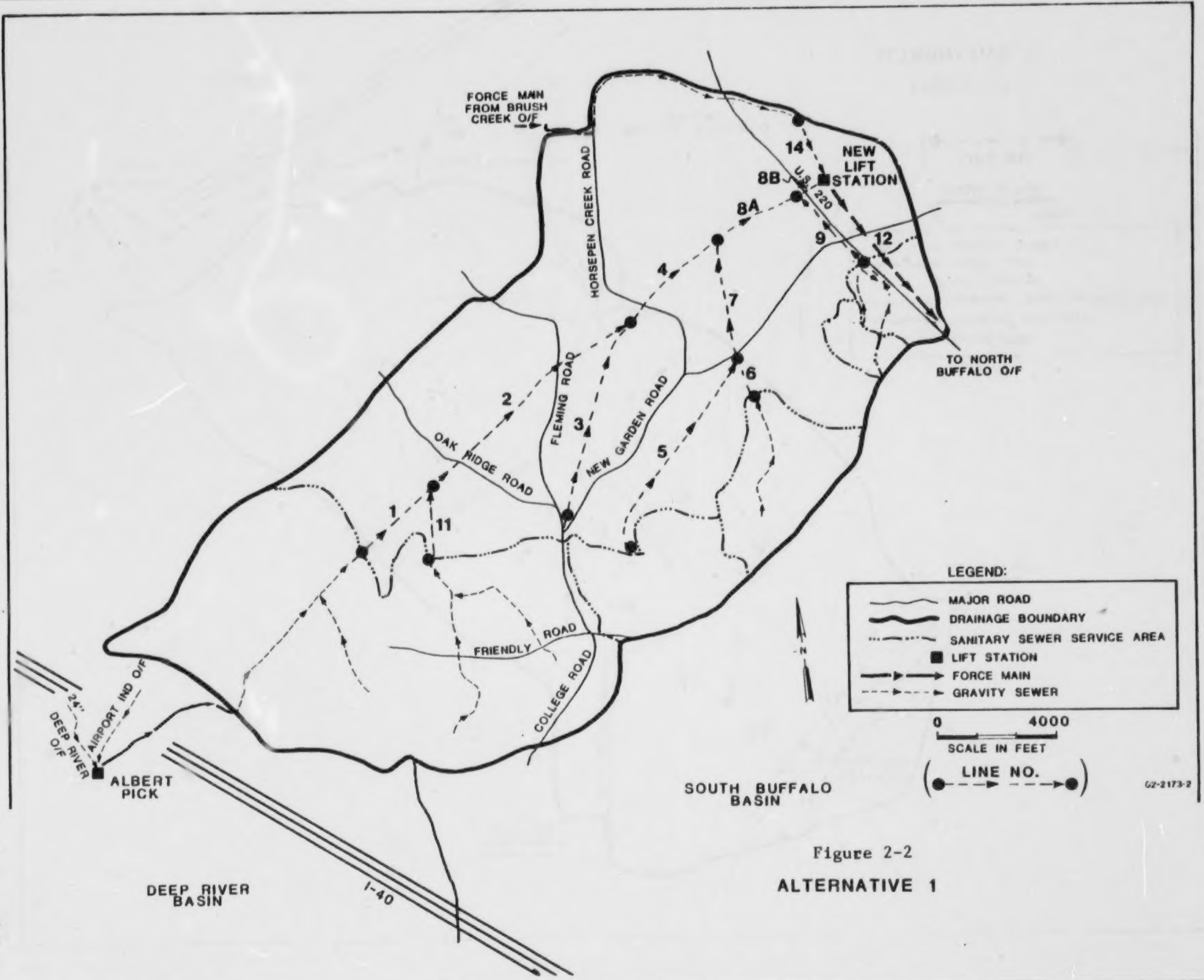

FORCE MAIN FROM BRUSH CREEK O/F
HORSEPEN CREEK ROAD
14
NEW LIFT STATION
8B
U.S. 220
8A
9
12
4
7
TO NORTH BUFFALO O/F
2
FLEMING ROAD
3
NEW GARDEN ROAD
6
5
OAK RIDGE ROAD
1
11
FRIENDLY ROAD
COLLEGE ROAD
24"
DEEP RIVER O/F
AIRPORT IND O/F
ALBERT PICK
I-40
DEEP RIVER BASIN
SOUTH BUFFALO BASIN
N
LEGEND:
MAJOR ROAD
DRAINAGE BOUNDARY
SANITARY SEWER SERVICE AREA
LIFT STATION
FORCE MAIN
GRAVITY SEWER
0
4000
SCALE IN FEET
LINE NO.
G2-2173-2

Figure 2-2

ALTERNATIVE 1

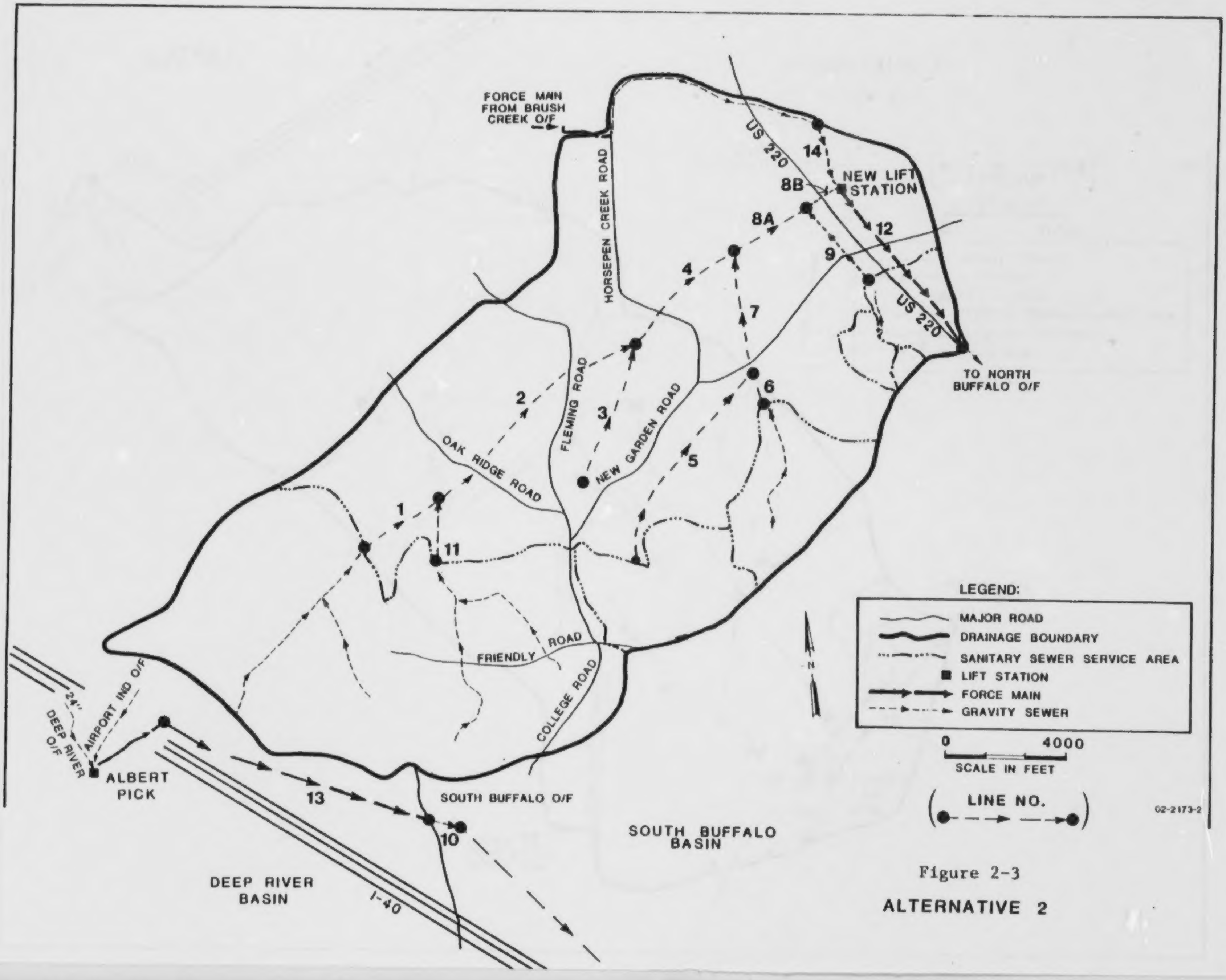

FORCE MAIN FROM BRUSH CREEK O/F
HORSEPEN CREEK ROAD
US 220
US 220
14
8B
NEW LIFT STATION
8A
12
9
4
7
TO NORTH BUFFALO O/F
2
3
FLEMING ROAD
NEW GARDEN ROAD
6
5
OAK RIDGE ROAD
1
11
FRIENDLY ROAD
COLLEGE ROAD
24"
DEEP RIVER O/F
AIRPORT IND O/F
ALBERT PICK
13
10
SOUTH BUFFALO O/F
SOUTH BUFFALO BASIN
DEEP RIVER BASIN
I-40
N
LEGEND:
MAJOR ROAD
DRAINAGE BOUNDARY
SANITARY SEWER SERVICE AREA
LIFT STATION
FORCE MAIN
GRAVITY SEWER
0
4000
SCALE IN FEET
LINE NO.
02-2173-2

Figure 2-3

ALTERNATIVE 2

Alternative 3 - abandon all lift stations in HC basin except Stage Coach Trail, Wagon Wheel, and Albert Pick lift station; Stage Coach Trail lift station will transfer wastewater to SBC collection system; construction of HC interceptor from Fleming Road-New Garden Road intersection to U.S. Highway 220 and collection lines to abandoned lift stations; construction of new lift station and force main near U.S. Highway 220 to transfer HC interceptor wastewater to NBC collection system (see Figure 2-4).

Alternative 4 - abandon all lift stations in HC basin except Stage Coach Trail, Wagon Wheel, and Albert Pick lift stations; Stage Coach Trail lift station will transfer wastewater to SBC collection system; construction of new force main from Albert Pick lift station to new outfall discharging to SBC collection system; construction of HC interceptor from Fleming Road-New Garden Road intersection to U.S. Highway 220 and collection lines to abandoned lift stations; construction of new lift station and force main near U.S. Highway 220 to transfer HC interceptor wastewater to NBC collection system (see Figure 2-5).

Alternative 5-"No Action" - maintain existing HC collection system; new wastewater sources in excess of capacity must be accommodated by septic tank systems (see Figure 2-6).

Alternative 6-"Modified No Action" - construction of new force main from Albert Pick lift station to new outfall discharging to SBC collection system; existing HC collection system will be maintained and operated with the addition of standby power (see Figure 2-7).

2.3 Description of the Proposed Action

The proposed action for wastewater collection system improvements in the Horsepen Creek basin is Alternative 2E (which is sized for existing development only) and is composed of:

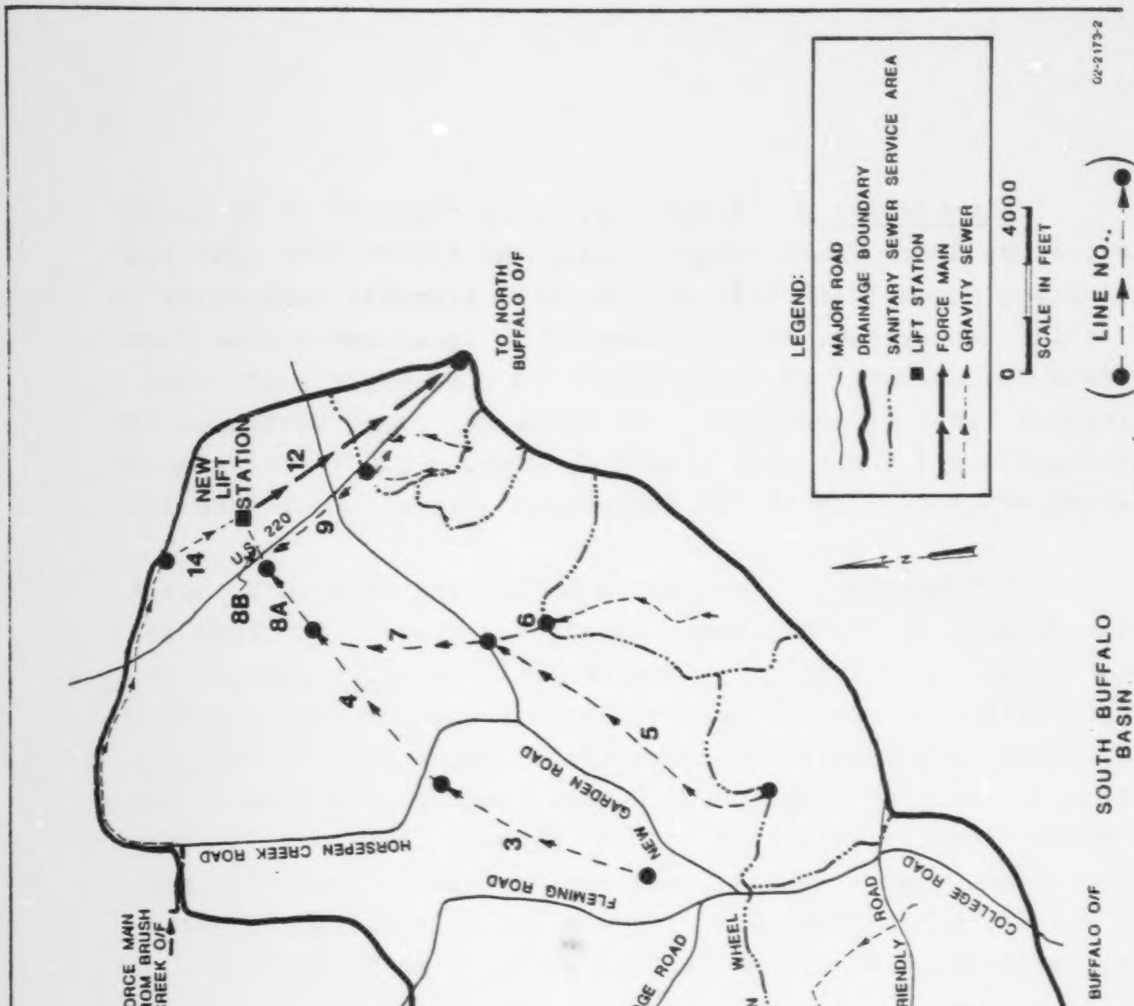

TO NORTH BUFFALO O/F
NEW LIFT STATION
12
14
U.S. 220
9
8B
8A
7
6
4
5
3
HORSEPEN CREEK ROAD
NEW GARDEN ROAD
FLEMING ROAD
FORCE MAIN FROM BRUSH CREEK O/F
OAK RIDGE ROAD
WAGON WHEEL
FRIENDLY ROAD
COLLEGE ROAD
15
STAGE COACH TRAIL
SOUTH BUFFALO O/F
SOUTH BUFFALO BASIN
I-40
DEEP RIVER BASIN
ALBERT PICK
AIRPORT IND O/F
24"
DEEP RIVER O/F
N
LEGEND:
MAJOR ROAD
DRAINAGE BOUNDARY
SANITARY SEWER SERVICE AREA
LIFT STATION
FORCE MAIN
GRAVITY SEWER
0
4000
SCALE IN FEET
LINE NO.
G/2-2173-2

Figure 2-4

ALTERNATIVE 3

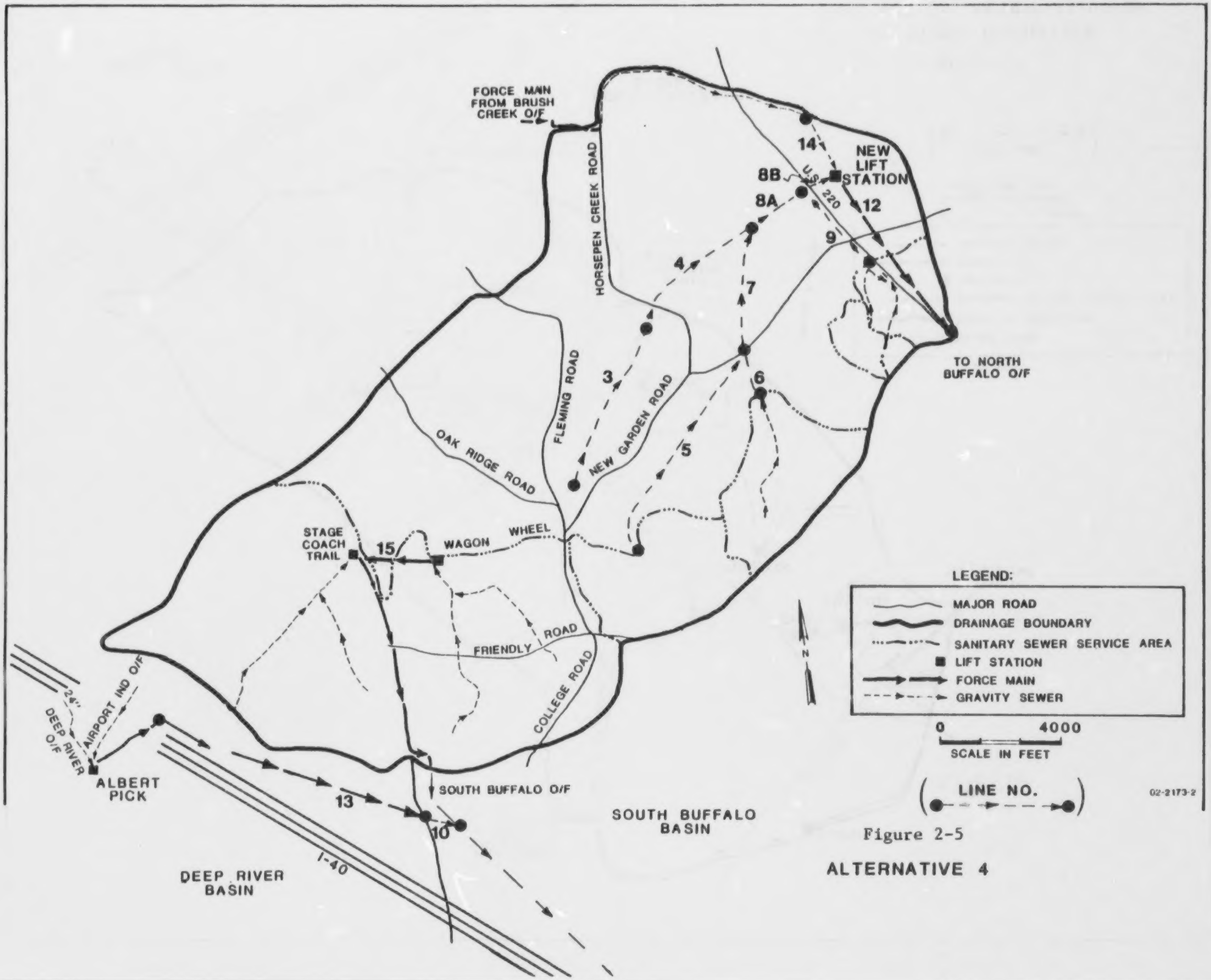

FORCE MAIN FROM BRUSH CREEK O/F
HORSEPEN CREEK ROAD
FLEMING ROAD
NEW GARDEN ROAD
OAK RIDGE ROAD
WAGON WHEEL
STAGE COACH TRAIL
FRIENDLY ROAD
COLLEGE ROAD
U.S. 220
NEW LIFT STATION
TO NORTH BUFFALO O/F
SOUTH BUFFALO O/F
AIRPORT IND O/F
24"
DEEP RIVER O/F
ALBERT PICK
I-40
SOUTH BUFFALO BASIN
DEEP RIVER BASIN
3
4
5
6
7
8A
8B
9
10
12
13
14
15
N
LEGEND:
MAJOR ROAD
DRAINAGE BOUNDARY
SANITARY SEWER SERVICE AREA
LIFT STATION
FORCE MAIN
GRAVITY SEWER
0
4000
SCALE IN FEET
LINE NO.
02-2173-2

Figure 2-5

ALTERNATIVE 4

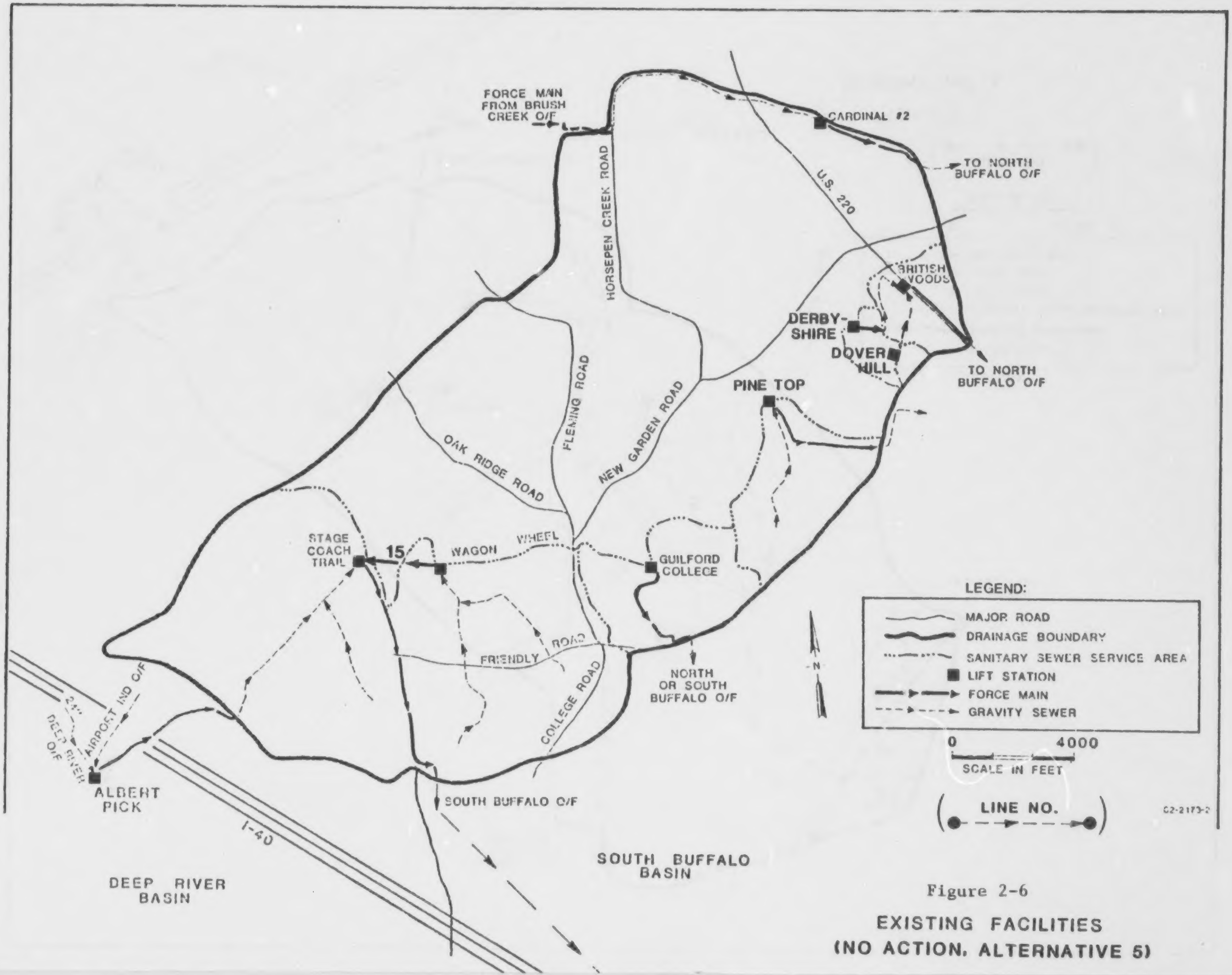

FORCE MAIN FROM BRUSH CREEK O/F
CARDINAL #2
TO NORTH BUFFALO O/F
U.S. 220
HORSEPEN CREEK ROAD
BRITISH WOODS
DERBY-SHIRE
DOVER HILL
TO NORTH BUFFALO O/F
PINE TOP
FLEMING ROAD
NEW GARDEN ROAD
OAK RIDGE ROAD
WAGON WHEEL
STAGE COACH TRAIL
15
GUILFORD COLLEGE
FRIENDLY ROAD
COLLEGE ROAD
NORTH OR SOUTH BUFFALO O/F
24" DEEP RIVER O/F
AIRPORT IND O/F
ALBERT PICK
SOUTH BUFFALO O/F
I-40
DEEP RIVER BASIN
SOUTH BUFFALO BASIN
N
LEGEND:
MAJOR ROAD
DRAINAGE BOUNDARY
SANITARY SEWER SERVICE AREA
LIFT STATION
FORCE MAIN
GRAVITY SEWER
0
4000
SCALE IN FEET
LINE NO.
C2-2173-2

Figure 2-6

EXISTING FACILITIES
(NO ACTION, ALTERNATIVE 5)

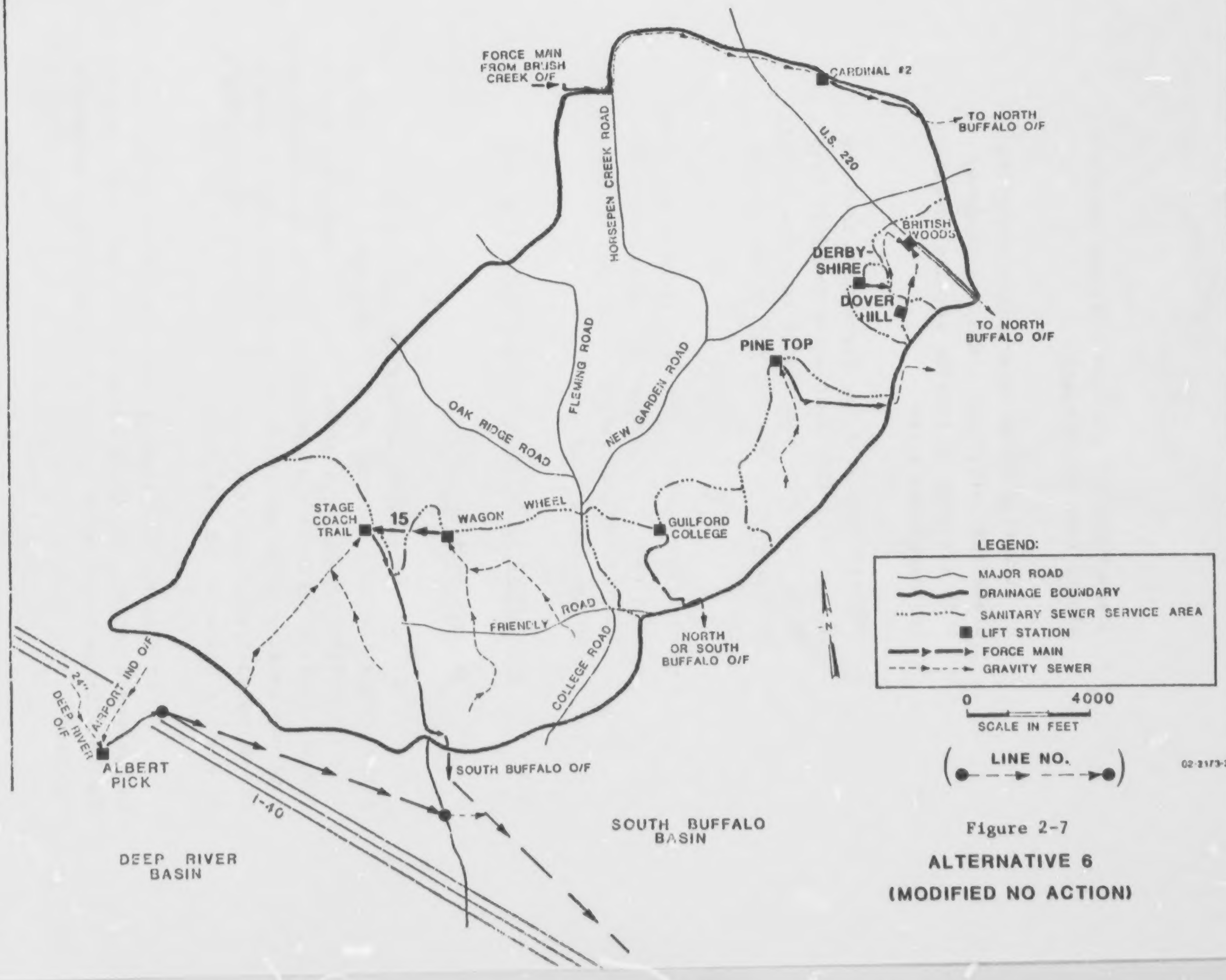

FORCE MAIN FROM BRUSH CREEK O/F
CARDINAL #2
TO NORTH BUFFALO O/F
U.S. 220
BRITISH WOODS
DERBY-SHIRE
DOVER HILL
TO NORTH BUFFALO O/F
PINE TOP
HORSEPEN CREEK ROAD
FLEMING ROAD
NEW GARDEN ROAD
OAK RIDGE ROAD
STAGE COACH TRAIL
15
WAGON WHEEL
GUILFORD COLLEGE
FRIENDLY ROAD
COLLEGE ROAD
NORTH OR SOUTH BUFFALO O/F
AIRPORT IND O/F
24"
DEEP RIVER O/F
ALBERT PICK
SOUTH BUFFALO O/F
I-40
DEEP RIVER BASIN
SOUTH BUFFALO BASIN
N
LEGEND:
MAJOR ROAD
DRAINAGE BOUNDARY
SANITARY SEWER SERVICE AREA
LIFT STATION
FORCE MAIN
GRAVITY SEWER
0
4000
SCALE IN FEET
LINE NO.
02-2173-2

Figure 2-7

ALTERNATIVE 6
(MODIFIED NO ACTION)

- abandonment of all lift stations except Albert Pick in HC basin,

- construction of HC interceptor along the creek and collection lines to abandoned lift stations to provide service to existing developed areas,

- construction of a new force main from the Albert Pick lift station to transfer Deep River tributary wastewater to a new outfall discharging to the SBC collection system, and

- construction of a new lift station and force main near U.S. Highway 220 to transfer HC interceptor wastewater to the NBC wastewater collection system.

2.4 Environmental Effects of the Proposed Action

2.4.1 Natural Environment

Direct air quality impacts of the proposed action will occur during the construction phase. Only total suspended particulates (TSP) are of any concern. A short-term increase in TSP levels from fugitive dust emissions may be expected to occur. Indirect impacts associated with the predicted urbanization of the Horsepen Creek area will be an elevation of ambient levels of all the criteria air pollutants.

No adverse odor impacts are expected as a result of the proposed action. A slight decrease in odor levels may occur due to elimination of several lift stations that occasionally surcharge.

Noise levels in the area will increase during the construction phase as a result of heavy equipment operation. Ambient noise levels will increase gradually due to urbanization and attendant increases in traffic, construction, etc.

No significant geological impacts are expected. Soil will be lost due to erosion during construction of the interceptor system. Urbanization of almost all prime farmland soils in the area will be an indirect impact of this project. But this land use change is expected to reduce soil loss due to erosion.

Ground-water supplies should not be affected appreciably by this project. Total recharge in the area will be reduced slightly due to the increases in impervious area expected as a result of urbanization. Ground-water quality should not be adversely affected if good engineering practices are used to prevent exfiltration from the proposed sewer system, and the capacity of the lines is not exceeded. Existing septic tank problem areas will be provided with sewer service. The possibility of future septic tank problems should be alleviated by strict enforcement of the new Guilford County septic tank ordinance.

The major direct impacts of the project on surface water quality will be improvements in quality due to the sewering of existing septic tank problem areas and the elimination of the system of lift stations. A short-term increase in sediment loads during construction is the major adverse direct impact. Indirect impacts are related to the predicted increase in nonpoint source pollution due to urbanization of the Horsepen Creek watershed. Ultimately, these impacts will be substantially less under the proposed action than they would be if an alternative serving future population were selected.

BOD, phosphorus, and heavy metals concentration are expected to increase in Horsepen Creek. Suspended solids and dissolved oxygen levels are expected to decrease. These changes in Horsepen Creek water quality will have an impact on Lake Brandt water quality as well. Reduced suspended solids levels will lower turbidity in the lake, and this, in turn, may promote eutrophication and the occurrence of nuisance algal blooms. Lead and arsenic levels may increase as a result of urbanization, presenting a potentially serious constraint to the use of Lake Brandt water for drinking water purposes in Greensboro.

Direct impacts on the biological communities in the Horsepen Creek basin as a result of this project will be minor. Approximately 123 acres will be seriously disturbed during the construction phase. Indirect impacts will be more significant as urbanization occurs. The terrestrial habitats in the area will become more fragmented, favoring those plants and animals which are adapted to a closer association with man. The aquatic habitat in Horsepen Creek may be impaired if nonpoint source pollution increases. Any increase in pollutants will favor those aquatic organisms which are adapted to their presence. A decrease in aquatic biota diversity can be expected.

2.4.2 Man-Made Environment

Most of the land now presently under cultivation or forested will be converted to residential use under all project alternatives. The pattern of development should follow established trends with commercial and industrial development occurring primarily in the southwestern portion of the basin. Future subdivisions with sewers will probably occur adjacent to the already sewered areas. The necessity of a low density septic tank development in order to protect the Greensboro water supply in Lake Brandt could result in a more costly public services system.

Under any alternative for the provision of sewer service almost all available land in the basin that is not environmentally sensitive will eventually be developed. Development of sensitive areas would have serious impacts and should be restricted.

2.5 Mitigating Measures

General mitigating measures regarding the direct impacts of construction of an interceptor system on air quality, noise, soils, etc., are addressed in the appropriate sections in the Greensboro EIS (EN-R-618). Mitigating measures concerning water quality and land use, those areas where significant adverse impacts can be expected to occur, are summarized in the following paragraphs.

Preservation of water quality in Horsepen Creek is largely the responsibility of the local governments in the area. As part of a program to preserve water quality, it is recommended that the appropriate governmental bodies initiate the following:

- development of a Section 208 planning program,
- a regular water quality monitoring program for Horsepen Creek and Lake Brandt,
- a comprehensive runoff control ordinance,
- restriction of any development in the freshwater marsh at the confluence of Horsepen Creek and Lake Brandt,

legal restrictions preventing future tie-ins to the Horsepen Creek interceptor system beyond its design capacity,

acquisition of lands for recreation and conservation,

multiple use of interceptor corridor for recreation and conservation, and

the preservation of water quality in the area will also be greatly enhanced by the continued strict enforcement of the Guilford County septic ordinance and the sub-division ordinance restricting any development within the Horsepen Creek floodplain.

Minimizing adverse impacts related to land use will require Greensboro and Guilford County officials to plan for a particular growth scenario and implement control measures to ensure that development follows the plan. The Master Plan currently under consideration is a step in that direction. The "Open Space Program" of January, 1977, and the "Land Use Goals and Policies" statement of Guilford County demonstrate the desire of county officials for balancing development interests with environmental considerations.

In short, it appears that many of the control measures required to promote orderly land use and prevent development in environmentally sensitive areas are already in existence in some form or are under consideration. Strict enforcement of existing measures together with the institution of the additional measures proposed will provide a comprehensive program for water quality protection.

3.0 REVISIONS TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

Several changes are required in the Draft EIS to reflect alterations in the project since the DEIS was issued and to incorporate changes resulting from comments on the DEIS. The revisions indicated below incorporate the most important revisions required; minor or insignificant alterations are not included. Revisions in response to comments are generally included only if the changes are not adequately or compeletly expressed in Chapter 4 of this Final EIS.

3.1 Wastewater Flows

3.1.1 Domestic and Commercial Flows

The population of the Horsepen Creek Basin was originally estimated as of 1975 in the Greensboro-Guilford County, North Carolina 201 Wastewater Treatment System Draft EIS (EN-R-618) at 8,080 persons. It was felt that a significant change had occurred since that time, so a new survey and revised estimate were made in February 1979. This survey consisted of a windshield count of all residences in the basin. The number of residences was then multiplied by a standard occupancy rate. As a result of this, it was estimated that the current population of the Horsepen Creek Basin is approximately 13,830 persons. Domestic and commercial wastewater flows (including allowable infiltration/inflow) were estimated on the basis of 70 gallons per capita per day (gcd). Therefore, the domestic and commercial component of the flows was raised from 0.57 million gallons per day (MGD) to 0.97 MGD in this Final EIS.

3.1.2 Industrial Flows

It was presumed in the DEIS that all present and future industrial flows would be segregated and handled by the Albert

Pick lift station. It was determined that this would not be cost effective, and therefore the present and committed future (letters of intent) industrial flows of 0.78 MGD were added to the Horsepen Creek Interceptor. This included an estimated 0.15 MGD for future tie-in of the Greensboro-High Point Airport. The letters of intent must be followed up with legally binding letters of commitment before the Step III construction grant is issued. If this is not done, the local agencies must pay to have the line redesigned to a smaller size.

3.1.3 Institutional Flows

Guilford College currently discharges to the Guilford College lift station service area. To accomodate wastewater from present and future enrollment, 0.09 MGD was added as institutional flow.

3.1.4 Other Flows

The Cardinal #2 lift station currently handles a small flow from another basin. Since it is located close to the site of the proposed new lift station, it should logically drain by gravity to this station. The 0.02 MGD currently handled by Cardinal #2 was thus included in sizing the new lift station.

The Albert Pick lift station currently handles 0.14 MGD from the Deep River Basin. Since it was determined that Albert Pick would not handle the industrial flow from Horsepen Creek, the flow to this station was reduced from 1.1 MGD to 0.15 MGD present and committed future flow.

3.1.5 Summary

The flows that were used in the design of the collection lines for this FEIS are summarized in Table 3-1.

TABLE 3-1. FLOW SUMMARY (By Service Area) FOR HORSEPEN CREEK INTERCEPTOR

Flow Component	Total	Stagecoach Trail	Wagon Wheel	Guilford College	Pinetop	British Woods	Balance
Domestic and Commercial Including I/I	.968	.020	.463	.088	.123	.116	.158
Industrial (Existing)	.310	.310	--	--	--	--	--
(Letters of Intent)	.304	.304	--	--	--	--	--
Airport (1995)	.153	.153	--	--	--	--	--
Institutional	.090	--	--	.090	--	--	--
TOTALS	1.825	.787	.463	.178	.123	.116	.158
OTHER:							
Cardinal #2	.024						
Albert Pick Service Area							
Present	.144						
Letters of Intent	.010						
ALBERT PICK TOTAL	.154						

3.2 Collection Line Sizes

Primarily, as a result the changes in design flows (as discussed in Section 3.1), the pipe sizes for the gravity sewers and force mains in the proposed Horsepen Creek collection system were recalculated. Since the final evaluation only involved those alternatives which served the existing population, new calculations were performed on Alternatives 1E, 2E, 3E, 4E, 5, and 6 only. The line-sizing methodology employed was identical to that described in the DEIS.

Since the proposed new lift station is to recieve flow from the present Cardinal #2 lift station, several changes in the line configuration were required as follows:

- re-locate new lift station to east side of U.S. 220 (Alternatives 1 through 4);
- change Line 8 to Line 8A and add Line 8B, gravity sewer, to drain from end of Line 8A to re-located new lift station (Alternatives 1 through 4);
- add Line 14, gravity sewer, to drain from present site of Cardinal #2 lift station to site of new lift station (Alternatives 1 through 4); and
- add Line 15, force main, as relief line to parallel existing six-inch force main from Wagon Wheel lift station to Stage Coach Trail lift station (Alternatives 3 through 6).

These changes are reflected in the revised schematic figures presented in Chapter 2. Figures 2-2, 2-3, 2-4, 2-5, 2-6, and 2-7 replace Figures 3-1, 3-2, 3-3, 3-4, 3-5, and 3-6 respectively in the DEIS. Figure 2-3 also replaces Figure 2-1 in DEIS.

The revised design sizes for the sewer line segments are summarized in Table 3-2. This table supersedes Table 3-1, page 25 of the DEIS. Detailed analyses of the sewer line segments for Alternatives 1E, 2E, 3E, 4E, and 6 are presented in Tables 3-3, 3-4, 3-5, 3-6, and 3-7.

3.3 Cost Analysis of Alternatives

Due to the changes in sewer line sizes and configurations, a revised cost anlaysis of alternatives was prepared. Costs were calculated as described in Section 3.3 of the DEIS. Net present value was calculated on the basis of 6 7/8 percent APR, as promulgated by the U.S. Water Resources Council on 1 October 1978, over a 20-year design period (1980-2000).

The revised costs of the various alternatives are presented in Table 3-8. This supersedes Table 3-3 on page 41 of the DEIS.

TABLE 3-2. DESIGN SIZES FOR SEWER LINE SEGMENTS
(Diameter in Inches)

Line No.	Alternative No.						Line Length (feet)
	1E	2E	3E	4E	5	6	
1	15	14					4,100
2	21	18					11,200
3	8	8	8	8			5,000
4	21	21	12	12			6,000
5	8	8	8	8			9,000
6	8	8	8	8			900
7	10	10	10	10			5,000
8a	27	24	14	14			4,400
8b	27	24	15	15			800
9	8	8	8	8			5,000
10		8		8		8	1,000
11	12	12					1,000
12	20	20	10	10			8,600
13		8		8		8	12,000
14	8	8	8	8			2,600
15			8	8	8	8	2,200

TABLE 3-3. DESCRIPTION OF HORSEPEN CREEK WASTEWATER TRANSMISSION LINES (Alternative: 1E)

Line No.	Designation	Diameter (inches)	Peak Design Flow (cfs)	Capacity at 2/3 Full (cfs)	Length (feet)	No. of Manholes	Slope (ft/100 ft)
1	Gravity	15	2.913	3.142	4,100	13	0.41
2	Gravity	21	4.396	5.945	11,200	34	0.26
3	Gravity	8	0.293	1.014	5,000	13	1.08
4	Gravity	21	4.740	4.875	6,000	18	0.18
5	Gravity	8	0.551	0.850	9,000	23	0.78
6	Gravity	8	0.381	1.029	900	3	1.11
7	Gravity	10	0.981	0.991	5,000	13	0.35
8a	Gravity	27	5.771	7.239	4,400	13	0.11
8b	Gravity	27	6.130	7.756	800	3	0.125
9	Gravity	8	0.359	1.296	5,000	13	1.70
10	Gravity	-	--	--	1,000	3	1.50
11	Gravity	12	1.433	1.944	1,000	3	0.50
12	Force Main	20	7.4	--	8,600	-	--
13	Force Main	-	--	--	12,000	-	--
14	Gravity	8	0.074	1.246	2,600	7	1.58

TABLE 3-4. DESCRIPTION OF HORSEPEN CREEK WASTEWATER TRANSMISSION LINES (Alternative: 2E)

Line No.	Designation	Diameter (inches)	Peak Design Flow (cfs)	Capacity at 2/3 Full (cfs)	Length (feet)	No. of Manholes	Slope (ft/100 ft)
1	Gravity	14	2.437	2.620	4,100	13	0.41
2	Gravity	18	3.919	3.970	11,200	34	0.26
3	Gravity	8	0.293	1.014	5,000	13	1.08
4	Gravity	21	4.263	4.875	6,000	18	0.18
5	Gravity	8	0.551	0.850	9,000	23	0.78
6	Gravity	8	0.381	1.029	900	3	1.11
7	Gravity	10	0.981	0.991	5,000	13	0.35
8a	Gravity	24	5.293	5.311	4,400	13	0.11
8b	Gravity	24	5.653	5.690	800	3	0.125
9	Gravity	8	0.359	1.296	5,000	13	1.70
10	Gravity	8	0.477	1.211	1,000	3	1.50
11	Gravity	12	1.433	1.944	1,000	3	0.50
12	Force Main	20	6.9	--	8,600	-	--
13	Force Main	8	0.6	--	12,000	-	--
14	Gravity	8	0.074	1.246	2,600	7	1.58

TABLE 3-5. DESCRIPTION OF HORSEPEN CREEK WASTEWATER TRANSMISSION LINES (Alternative: 3E)

Line No.	Designation	Diameter (inches)	Peak Design Flow (cfs)	Capacity 2/3 Full (cfs)	Length (feet)	No. of Manholes	Slope (ft/100 ft)
1	Gravity	--	--	--	4,100	--	--
2	Gravity	--	--	--	11,200	--	--
3	Gravity	8	0.343	1.014	5,000	13	1.08
4	Gravity	12	0.393	1.248	6,000	18	0.22
5	Gravity	8	0.551	0.850	9,000	23	0.78
6	Gravity	8	0.381	1.029	900	3	1.11
7	Gravity	10	0.981	0.991	5,000	13	0.35
8a	Gravity	14	1.424	1.629	4,400	13	0.17
8b	Gravity	15	1.783	1.826	800	3	0.15
9	Gravity	8	0.359	1.296	5,000	13	1.70
10	Gravity	--	--	--	1,000	--	--
11	Gravity	--	--	--	1,000	--	--
12	Force Main	10	2.2	--	8,600	-	--
13	Force Main	--	--	--	12,000	-	--
14	Gravity	8	0.074	1.246	2,600	7	1.58
15	Force Main	8	1.7	--	2,200	-	--

TABLE 3-6. DESCRIPTION OF HORSEPEN CREEK WASTEWATER TRANSMISSION LINES (Alternative: 4E)

Line No.	Designation	Diameter (inches)	Peak Design Flow (cfs)	Capacity at 2/3 Full (cfs)	Length (feet)	No. of Manholes	Slope (ft/100 ft)
1	Gravity	--	--	--	4,100	--	--
2	Gravity	--	--	--	11,200	--	--
3	Gravity	8	0.343	1.014	5,000	13	1.08
4	Gravity	12	0.393	1.248	6,000	18	0.22
5	Gravity	8	0.551	0.850	9,000	23	0.78
6	Gravity	8	0.381	1.029	900	3	1.11
7	Gravity	10	0.981	0.991	5,000	13	0.35
8a	Gravity	14	1.424	1.629	4,400	13	0.17
8b	Gravity	15	1.783	1.826	800	3	0.15
9	Gravity	8	0.359	1.296	5,000	13	1.70
10	Gravity	8	0.477	1.211	1,000	3	1.50
11	Gravity	--	--	--	1,000	--	--
12	Force Main	10	2.2	--	8,600	--	--
13	Force Main	8	0.6	--	12,000	--	--
14	Gravity	8	0.074	1.246	2,600	7	1.58
15	Force Main	8	1.7	--	2,200	--	--

TABLE 3-7. DESCRIPTION OF HORSEPEN CREEK WASTEWATER TRANSMISSION LINES (Alternative: 6)

Line No.	Designation	Diameter (inches)	Peak Design Flow (cfs)	Capacity at 2/3 Full (cfs)	Length (feet)	No. of Manholes	Slope (ft/100 ft)
1	Gravity	--	--	--	4,100	--	--
2	Gravity	--	--	--	11,200	--	--
3	Gravity	--	--	--	5,000	--	--
4	Gravity	--	--	--	6,000	--	--
5	Gravity	--	--	--	9,000	--	--
6	Gravity	--	--	--	900	--	--
7	Gravity	--	--	--	5,000	--	--
8a	Gravity	--	--	--	4,400	--	--
8b	Gravity	--	--	--	800	--	--
9	Gravity	--	--	--	5,000	--	--
10	Gravity	8	0.477	1.211	1,000	3	1.50
11	Gravity	--	--	--	1,000	--	--
12	Force Main	--	--	--	8,600	--	--
13	Force Main	8	0.6	--	12,000	--	--
14	Gravity	--	--	--	2,600	--	--
15	Force Main	8	1.7	--	2,200	-	--

TABLE 3-8. COST OF ALTERNATIVES

Alternative No.	Capital ($ million)	O&M ($ thousand/yr)	Net Present Value ($million)	(rank)
1E	2.1	15	2.0	5
2E	2.1	15	2.0	5
3E	1.1	28	1.3	3
4E	1.3	29	1.4	4
5	0.2	31	0.5	1
6	0.3	31	0.6	2

3.4 Errata

Other appropriate corrections to the DEIS are itemized in this section. Those items which have already been discussed in detail in Sections 3.1, 3.2, and 3.3 are not included in this itemization.

Page	Location	Revision
xvi	Paragraph 1	Insert the following sentence at the end of grant conditions: Upon completion of the proposed action, the existing systems of lift stations and force mains will be removed from service.
4	Paragraph 1	Change total project capital cost to $2.1 million. Change annual O&M costs to $15 thousand.
6	Paragraph 1	Delete third sentence from the end.
6	Paragraph 2	Change first sentence to read as follows: Facilities for the proposed action are designed to transfer approximately 1.0 MGD of domestic and commercial flow and 0.8 MGD of industrial and institutional flow from the Horsepen Creek Basin to the North Buffalo Basin for treatment. Approximately 0.2 MGD from the Deep River Basin will be transferred to the South Buffalo Basin via the Albert Pick lift station.
6	Paragraph 2	Change the lift station capacity (second sentence) to 4.4 MGD.
7	Paragraph 3	Change to read as follows: A new 200 horsepower lift station will be constructed east of U.S. Highway 220 with a peak capacity to deliver approximately 4.4 MGD.

Page	Location	Revision
7	Paragraph 6	Change estimated electricty consumption (second sentence) to 700 thousand kwhr.
9	Table 2-1	Replace Table 2-1 with Table 3-4 of this chapter.
10	Page 10	Replace entire page with Section 5-2 of this Final EIS.
12	Paragraph 1	Change number of alternatives (first sentence) to six. Change second sentence to read as follows: "No Action" and "Modified No Action" are included as two of these alternatives.
12	Paragraph 2	After "No Action" add: and "Modified No Action" alternatives
23	Figure 3-7	Change title to read as follows: Future Growth Areas In the Horsepen Creek Basin, and Domestic and Commercial Wastewater Flows By Subbasin.
23	Figure 3-7	Change "E" flow values starting at the top of the page and proceeding clockwise as follows: E=0.158, E=0.080, E=0.026, E=0.010, E=0.123, E=0.088, E=0.020
26	Paragraph 2	Change "No Action Alternative" (second sentence) to: "No Action" and "Modified No Action" alternatives.
30	Paragraph 3	Fourth sentence, change reference to: (RA-R-667).

Page	Location	Revision
40	Paragraph 1	Change fifth sentence to read as follows: A trend factor of 1.5 was applied to construction and O&M costs of lift stations to bring numbers into current dollars.
64	Paragraph 1	Last line, change maximum depth to approximately 36 feet.
64	Paragraph 3	Third sentence, change reference to: (RA-R-667).
79	Paragraph 5	Second sentence, change "mean depth of 36 feet" to: maximum depth of 36 feet.
89	Paragraph 2	Delete fourth sentence.
101	Paragraph 2	At end of third sentence add: and a growth of 4,870 persons from the 1979 population of 13,830.
101	Paragraph 2	Fourth sentence, change number of people to 4,870.
101	Paragraph 3	Delete entire paragraph.
101	Paragraph 4	First sentence change number of people to 4,870.
102	Paragraph 1	First sentence, change number of people per household to 3.5. Second sentence, change number of acres to 1,391.
102	Paragraph 2	Delete first sentence. Change third sentence to read as follows: Thus, 360 acres (industrial and commercial) plus 1,390 acres (residential) or a total of 1,750 acres will be developed through the year 2000 under the proposed action.

Page	Location	Revision
103	Paragraph 1	First line, change number of acres projected to change to 1,750.

4.0 RESPONSES TO COMMENTS RECEIVED

Due to the large number of individuals commenting on the Draft EIS and the considerable overlapping of their concerns, the Agency has responded to these comments generally according to identified categories of concern. The comments from all commenters were assigned to one or more of these categories. However, much of the material presented in the comments was a restatement of information presented in the Draft EIS or only a preference for or against a certain alternative, and no Agency response to that material is explicitly made. To identify commenters with the various concerns expressed, each commenter has been assigned a numerical designation as follows:

1.	Campbell, F. E.	Chairman of the Board, County Commissioners, Guilford County
2.	Clapp, F. L.	Greensboro Board of Realtors
3.	Corbett, R. T.	Vice Chairman, Council on Economic Development, Greensboro Chamber of Commerce
4.	Deal, O.	Guilford County Commissioner
5.	Duckwall, T.	T. Gilbert Pearson Audubon Chapter: Greensboro, NC
6.	Blanchard, B.	Director Environmental Project Review: U.S. Department of Interior
7.	Elliot, A. L., Sr.	Citizen
8.	Hicks, J. L.	State Conservationist, USDA
9.	Hubert, T. E.	Chairman: Council on Community Development and Planning, Greensboro Chamber of Commerce
10.	Jezorek, J. R.	Environmental Action Coalition

11.	Schott, M.	Jaycees, President
12.	Johnston, A.	Community Development Manager, Greensboro Chamber of Commerce
13.	Kauranen, A. O.	Regional Engineer, Federal Energy Regulatory Commission
14.	Allen, C. S.	President: League of Women Voters
15.	Levenson, M. J.	Citizen
16.	Lewis, H. B.	Citizen
17.	Lutz, P. E.	Advisory Board for Environmental Quality: Guilford County
18.	Lutz, P. (Ms.)	Sierra Club: Joseph Le Conte Chapter
19.	Magann, Dr. D. P., III	Superintendent Guilford County School System
20.	Melvin, C. E.	President, Greensboro Chamber of Commerce
21.	Melvin, J.	Mayor, Greensboro, North Carolina
22.	Rees, J. R.	Soil Scientist, Physical Environments Analysts, Inc.
23.	Souther, R. H.	Citizen
24.	Yarbrough, J. E.	Regional Environmental Officer, HEW Region IV
25.	Taylor, A.	North Carolina Division of Policy Development
26.	Shaw, R. E., Jr.	Assistant Director of Public Works, Greensboro, North Caroina

27. Hight, A. A.	Colonel, Corps of Engineers, District Engineers
28. Lee, J. H.	Regional Environmental Officer, Department of the Interior
29. York, F.	Greensboro-High Point Homebuilders
30. Sekadlo, R.	Greensboro-High Point Airport Authority

The following three major categories were used to organize the comments:

- Engineering Design
- Water/Air Quality Impacts
- Economic and Human Resources Impacts

The remainder of this chapter is devoted to the responses to the comments received.

4.1 Engineering Design

Commenters: 1, 3, 9, 11, 12, 16, 21, 22, 23, 28

4.1.1 Comment

The USGS topographic maps used in the draft environmental impact statement, 1"-2000', were inadequate.

Response

The Agencies believe these maps, supplemented by field observation, are appropriate and suitable for the limited purposes of the EIS. The Agencies recognize that only approximate grades (slopes) and alignments of candidate sewer lines can be discerned from such maps, but these are useful for the preliminary planning of the EIS' environmental engineering investigation. (Indeed, 7½-minute USGS quadrangles are often the only maps available for such purposes.) In the later stages of this investigation, the existence of a more detailed topographic survey, performed as part of a previous study of Horsepen Creek interceptor alternatives, was brought to light. This survey was used to refine the grades and alignments for the main stem of the interceptor system and served as a basis for revised cost estimates in this Final EIS.

4.1.2 Comment

The Draft Environmental Impact Statement gives excavation depths of from 5 to 10 feet for sewer pipes. At present pipe diameters, the depths will go down to 20 feet over a length of 5000 feet. This will cause an unacceptable increase in the price of this project.

Response

Excavation to 20 foot depths is certainly technologically feasible and there are no criteria presented to gauge what is or is not an "acceptable" increase in the cost of this project. However, the Agencies concur that excavation depths should be minimized by a combination of prudent pipe alignment and pipe sizing that promotes efficient wastewater transmission. Using revised slopes and pipe sizes, the preliminary engineering presented in the Final EIS indicated maximum excavation depths of ten feet.

4.1.3 Comment

The size of the sewers did not allow for industrial users.

Response

The comment is misleading. The proposed Horsepen Creek Interceptor is designed to transmit all existing wastewater flow from industries in the Horsepen Basin and from industries whose wastewaters currently are introduced to the existing system. In addition, in accordance with EPA policy and guidelines, the proposed system is designed to accommodate those future industrial flows that have been specified in "letters of intent" (conditioned upon a firm agreement for such requirements in "letters of commitment" before detailed engineering plans are complete).

4.1.4 Comment

Wastewater generation from the Brush Creek Basin (the Cardinal Corporation system) to the north should be handled by the Horsepen lift station rather than retaining the Cardinal lift station in such close proximity to the proposed system.

Response

The Agencies concur with this observation. In the Final EIS, a line is recommended to carry the wastewater flow from the Cardinal station to the proposed Horsepen lift station. Cost of this line is included in alternatives 1 through 4 (all alternatives with a Horsepen lift station); increased pumping capability required is negligibly small.

4.1.5 Comment

The use of 70 gcd (gallons per capita per day) is inappropriate in computing flow projections.

Response

The state of North Carolina allows a maximum of 70 gcd of domestic and commercial flow for planning purposes. Of this 70 gcd, approximately 10 gcd is included as the commercial component. An analysis of commercial water billing records indicated a commercial component of less than half that amount in the HC Basin. The Agency believes that 70 gcd is an ample per capita flow contribution, and is consistent with the experience of the Greater Greensboro area.

4.1.6 Comment

No attention was given to serving industrially zoned undeveloped land in the Deep River Basin.

Response

Since the Deep River Basin was not in the 201 area covered in the draft environmental impact statement, it was not addressed, in accord with Agency regulations.

4.1.7 Comment

The system should be designed to accommodate flows from the airport.

Response

Flows from the airport are considered in the final environmental impact statement and are allowed for as a designated future wastewater component in the engineering analysis.

4.1.8 Comment

The flow of existing lift stations was not checked or used.

Response

This aspect of the Horsepen Interceptor EIS has been discussed at several technical coordination meetings with the City, EPA, State of North Carolina, and their consultants. The representativeness of the flow data specified for use and the proper phasing of flows from the various stations in the system could not be determined without reservations. Consequently, the design flow analysis was not based on lift station data but on standard per capita flow contributions and an updated population forecast disaggregated to subbasins. The results were compared to the test data from the existing lift stations and were found to be reasonable and consistent, and provided an ample margin of safety in the estimate.

4.1.9 Comment

The treatment facilities at the Lake Townsend Filter Plant should be more fully addressed.

Response

The Horsepen Creek Basin and the effect of its development upon Lake Brandt was the focus of this investigation. Lake Townsend is downstream from Lake Brandt and any negative changes in water quality affect the quality of Lake Townsend water. However, a complete analysis of Lake Townsend water quality and the facilities at the Lake Townsend Filter Plant was not necessary to ascertain adverse effects on the water supply in Lake Brandt.

4.1.10 Comment

The Draft Environmental Impact Statement does not address the provision for potential flows from existing, but temporarily unoccupied, industrial facilities or for an increase in load from current users.

Response

Committed future industrial flows, whether from existing or new users, have been accounted for in the FEIS.

4.1.11 Comment

The statement that industrial waste is not handled by the Stage Coach Trail life station is erroneous.

Response

It was initially planned that the present industrial flows, which all originate within the Stage Coach Trail subbasin, would be segregated and handled by the Albert Pick lift station. It was subsequently decided that this would not be cost effective. In the FEIS, all industrial flows have been retained in the Horsepen Creek basin.

4.1.12 Comment

The draft environmental impact statement does not address the ability of the Albert Pick lift station to pump the much greater distance to the South Buffalo outfall.

Response

It is anticipated and included in revised cost estimates that pump capability will be increased at the Albert Pick lift station when the new force main is constructed. There is very little wastewater currently associated with this component of the proposed system, and the additional cost is very small.

4.1.13 Comment

The impact of the wastewater flows from the Horsepen Creek basin on the North and South Buffalo Creek Treatment Plants and the effects of the flow of treated effluent on receiving streams should be discussed.

Response

The Environmental Impact Statement completed during December of 1977 on the Greensboro-Guilford County 201 Plan (EPA document number 904/9-77-037) discussed the potential impact of wastewater flows from the Horsepen Creek basin on the wastewater treatment plants and on the receiving stream. The treatment plants are properly sized to handle this flow and no adverse impact is expected to the receiving stream with the levels of treatment proposed.

4.2 Water/Air Quality Impacts

Commenters: 1, 2, 7, 8, 14, 15, 17, 20, 21, 22, 25

4.2.1 Comment

Stormwater management, zoning regulations geared to the protection of Lake Brandt and a monitoring system are needed for the Lake Brandt area.

Response

The Agencies encourage but cannot require such prudent measures as part of the wastewater interceptor grant conditions. A more complete list of measures recommended to mitigate growth related water quality impacts is given in Chapter 5 of this Final EIS. Citizens interested in the implementation of these measures should work with their local governments in this regard.

4.2.2 Comment

10 to 15 percent of precipitation infiltrating to cause ground-water recharge is probably overly optimistic.

Response

The regional water budget is poorly known. The sustained yield estimates are based on recent work of the Ground-Water Section of the North Carolina Department of Natural Resources and Community Development and on estimates made by the U.S. Geological Survey. The recharge rate almost certainly exceeds the current and anticipated withdrawal rates. It is recognized that an increase in impervious cover will slightly reduce the recharge rate, but this appears to be an academic concern.

4.2.3 Comment

The federal mandate to ultimately eliminate the use of leaded gasoline should be addressed in the discussion of the projected lead loading levels in Lake Brandt.

Response

The source(s) of lead in the Lake Brandt watershed and their relative importance are not currently known. While a reduction in the use of leaded gasoline may ultimately reduce lead loadings to Lake Brandt, this eventuality cannot be accurately determined as to whether, when, and to what extent it will occur. The uncertainties concerning this question contribute to the need for a monitoring system in the Greensboro watershed.

4.2.4 Comment

Mitigating measures were only recommended. They should be implemented prior to construction of the interceptor to help protect Lake Brandt and Horsepen Creek.

Response

This was not considered necessary, since the selected alternative does not encourage additional growth. Furthermore, these recommendations must be initiated and carried out over the long term at the local level of government. The North Carolina Department of Natural Resources and Community Development will be conducting statewide 208 work in the Lake Brandt area in the coming year.

4.3 Economic and Human Resources Impacts

Commenters: 1, 2, 3, 8, 9, 11, 19, 20, 21, 22, 23, 28

4.3.1 Comment

Limiting the commercial or industrial acreage is against the stated National Urban Policy of supplying jobs in urban areas.

Response

The National Urban Policy is designed to supply jobs to workers in areas of unemployment. This aim can be accomplished in the Greensboro area by rejuvenation of existing commercial and industrial facilities as well as by construction of new facilities in less environmentally sensitive areas than the Horsepen Creek Basin.

4.3.2 Comment

There is no mention in the DEIS of the planning board policy (adopted May 11, 1977) not to recommend residential densities greater than 20,000 ft^2/dwelling unit (½ acre).

Response

This was discussed in the report, "Investigations of Water Quality Impacts Related to Development of the Horsepen Creek Basin, Guilford County, North Carolina" (RA-R-507). Lot sizes were presumed to be ½ acre under a sewered development scenario and one (1) acre under a septic tank development scenario.

4.3.3 Comment

The limited and no growth alternatives make it more costly to provide transportation, and both educational and recreational facilities.

Response

On a per capita basis these costs might be increased. However, total expenditures for support services for this area under Alternative 2E will probably be less than expenditures under the full growth options. In addition, the cost of protecting the quality of Lake Brandt water is most probably less than the cost of finding a new supply of municipal water. These added expenses would increase the total cost of any full development plan.

4.3.4 Comment

No data are given to support the DEIS assertion that septic tank regulations are not strictly enforced in the Horsepen Creek area.

Response

The Draft Environmental Impact Statement does not assert that septic tank regulations are not strictly enforced in the Horsepen Creek area but, rather, that in the future these ordinances must be followed to avoid adverse impacts from improperly functioning septic tanks (DEIS, pp. 31, 107). The reference to this ordinance is made because the chosen alternative encourages further residential development on septic systems; not because of any identified deficiency in the county's enforcement procedures.

4.3.5 Comment

The population in the basin will continue to grow even if a limited or no growth option is taken.

Response

With proper zoning restrictions there is no reason the basin should grow any more than the county government believes is appropriate and compatible with the protection of Lake Brandt. The local government has the power to limit growth in the region and is the appropriate agency to use land use control measures to carry out a comprehensive land use planning program.

4.3.6 Comment

The use of demographic projections encourages the locating of numbers of persons, who may or may not be present at a future time, in natural areas physically unsuited for this type of land use.

Response

Demographic projections are based on current trends and indicate a possible future scenario. Whether this anticipated growth actually occurs is a function of the control the local governments have over development and local economic conditions. Projections are estimates and as such can also point out the undesirable consequences of following a particular course of action and enable the regulating organizations to alter those courses with the most adverse effects.

4.3.7 Comment

With a system designed solely for current needs, the remaining dwellings would need to be served by septic systems, further adding to the deterioration of Lake Brandt.

Response

The County Health Department's comprehensive septic tank ordinance, when strictly enforced, will minimize the effects of septic systems upon the Horsepen Creek Watershed. As the DEIS states (p. 31), the ultimate impacts to the watershed will be less utilizing a combination of septic tanks and collectors/lift stations/force mains than by strictly utilizing a sewerage system. The County's septic tank ordinance is technically sound and should minimize direct adverse impacts.

4.3.8 Comment

The low-density development proposed will severely restrict the developers' ability to effect economies of building.

Response

The limitation of residential development to larger lot sizes will tend to increase housing costs in the basin. This is a necessary tradeoff to maintain water quality in Lake Brandt. This effort to protect the watershed should not effect housing costs in other developing areas of Guilford County.

4.3.9 Comment

Installing the Horsepen Creek Interceptor will likely encourage and speed housing construction in the watershed of Lake Brandt.

Response

The Horsepen Creek Interceptor (2E) is designed for existing population only. This limited sewerage combined with effective local control through zoning restrictions will not cause an increase in housing in the Lake Brandt watershed.

4.3.10 Comment

The basin is the community's primary growth center for population and industry, limited growth would severely affect the economy of the entire region.

Response

The chosen alternative in the Draft Environmental Impact Statement is that which would have the least adverse effect on Lake Brandt. Limiting residential development in this basin should not significantly affect the region's economy since many other areas are available for residential development which are not in the watershed. All industrial users which produce the proper letters of intent and letters of commitment will be provided with service. The degradation of the water supply would have a far greater impact on the region's economy than limiting growth in the Horsepen Creek basin.

4.3.11 Comment

If the DEIS 2E configuration is inaccurate, then the operation and maintenance (O&M) cost projections are probably inaccurate.

Response

Revised O&M cost projections are included in the Final Environmental Impact Statement.

4.3.12 Comment

The DEIS states that cultural resources will be considered prior to construction. These resources should be considered in the early planning stages according to 40 CFR, Part 6.

Response

Cultural resources were considered in both the 201 plan and in the Draft EIS to assure minimal conflicts between any proposed wastewater facilities and any cultural facilties. A detailed archeological survey will be performed during the design (Step II) of the wastewater planning and construction program.

EPA's Region IV standard procedure for compliance with the National Historic Preservation Act of 1966, the Archeological and Historic Preservation Act of 1974, Executive Order 11593, and Title 36 CFR 800 is to perform reconnaissance on treatment plant sites during Facility Planning (Step 1) and to perform reconnaissance on interceptor lines during preparation of Plans and Specifications (Step 2). This procedure has been instituted since the exact location of interceptor routes is not known until on-site surveys have been performed on approval of Step 1 (Facility Planning), presentation of the impact on archeological resources from interceptors is not appropriate at this time.

The major alternatives associated with facility planning concern the backbone facilities, that is, the treatment plants' site locations and the general location of interceptor corridors. Once the plants have been located, there are multiple potential alignments which require detailed investigations to determine the most cost effective environmentally sound configuration. The level of detail required to determine these exact alignments is more appropriate for Step 2. As soon as an engineeringly sound alignment has been determined, an archeological reconnaissance is performed. In the major of cases, the alignment can then be shifted to avoid cultural resources. If the alignment cannot be adjusted, consultation with the Advisory Council is initiated.

The EIS states on page 5-3 that awarding of grant funds for construction will not occur until an archeological reconnaissance has been performed and approval has been received from EPA. Prior to approval, the consultative process contained in "Procedures for the Preservation of Historic and Cultural Properties", 36 CFR 800, will be followed as per our standard procedure.

There also will be minimal conflicts with both existing and proposed recreation sites. In fact, the opportunity of utilizing the Horsepen Interceptor right-of-way as a multipurpose project is being investigated by Guilford County as a result of this EIS.

5.0 AGENCY DECISION

This chapter delineates the proposed action to be pursued further in Step 2 activities and stipulates the conditions that must be met for Step 2 funding.

5.1 Conclusions

The Environmental Protection Agency and the North Carolina Department of Natural Resources and Community Development have chosen Alternative 2E as the proposed action. This alternative involves:

- abandonment of all lift stations in the Horsepen Creek (HC) basin except the Albert Pick lift station,
- construction of HC interceptor and collection lines (at a size to serve existing needs) to abandoned lift stations,
- construction of a new force main from the Albert Pick lift station to new outfall discharging to the South Buffalo Creek collection system, and
- construction of a new lift station and force main near U.S. Highway 220 to transfer HC interceptor wastewater to the North Buffalo Creek collection system.

This proposed action was chosen as the result of an alternatives evaluation conducted during the EIS process.

The results of this alternatives evaluation show that the most significant impacts from this project are to water quality and land use. Selection of the "No Action" or "Modified No Action" alternatives would encourage low density development throughout the basin. The existing service alternatives would also generally tend to encourage low density development. The future service alternatives will provide for much higher development densities throughout the basin. In the short term, this development will probably be concentrated adjacent to those areas that are currently developed. Ultimately, development will occur throughout the basin.

The less intensive land use densities of existing service alternatives will minimize the concentration of pollutants generated in urban runoff. These alternatives will have a significantly smaller potential adverse impact to water quality in Lake Brandt than the future service alternatives with their substantially higher land use densities.

Other potential adverse impacts to water quality could result from the existing system of lift stations and septic tank failures. The "No Action" and "Modified No Action" alternatives would not alleviate these potential hazards. Alternative 1E and 2E would do the best job in this regard by eliminating all but one lift station.

Alternative 2E is considered the most environmentally acceptable alternative since it alleviates the existing problems with the smallest encouragement of high density development. Therefore, Alternative 2E has been selected as the proposed action.

5.2 Step 2 Grant Conditions

As a result of this Environmental Impact Statement and the Step 1 Facilities Plan activities, the agency will require certain actions as conditions to receiving Step 2 grant funds. These Step 2 grant conditions are delineated as follows:

- Potentially affected areas will be surveyed to determine the presence of possible archaeological resources. This survey will be accomplished during the Step 2 process and the survey plan and results will be subject to approval by the North Carolina State Historic Preservation Officer and State Archaeologist.

- If possible, and complying with good engineering practices, interceptor lines should be constructed completely out of or on the edges of the floodplain. This condition should be evaluated during Step 2.

- An erosion and sedimentation control plan must be submitted to DNRCD and EPA for approval. This plan should meet the requirements of the Soil Conservation Service (see comment letter) and the Guilford County Soil and Water Conservation District.

- The maintenance of a 30-foot vegetative buffer between the edge of construction rights-of-way and stream banks will be required where feasible.

- The immediate revegetation of interceptor rights-of-way will be required.

- Upon completion of the proposed action, the existing system of lift stations and force mains will be removed from service.

In addition, it is recognized that other mitigating measures are important to the protection of water quality in this area. Therefore, it is recommended that the appropriate governmental bodies initiate the following:

- development of a Section 208 planning program,
- a regular water quality monitoring program for Horsepen Creek and Lake Brandt,
- a comprehensive runoff control ordinance,
- multiple use of the interceptor corridor for recreation and conservation.
- restriction of any development in the freshwater marsh at the confluence of Horsepen Creek and Lake Brandt,
- legal restrictions preventing future tie-ins to the Horsepen Creek interceptor system beyond its design capacity, and
- acquisition of lands for recreation and conservation, and

The preservation of water quality in the area will also be greatly enhanced by the continued strict enforcement of the Guilford County septic tank ordinance and the county subdivision ordinance restricting development within the Horsepen Creek floodplains.

6.0 BIBLIOGRAPHY

EN-R-687 Environmental Protection Agency, Region IV, *Greensboro-Guilford County, North Carolina 201 Wastewater Treatment System*, Final Environmental Impact Statement, EPA Contract 68-01-3436, Atlanta, Georgia, 1977.

RA-R-667 Radian Corporation, *Investigation of Water Quality Impacts Related to Development of the Horsepen Creek Basin*, Final Report, EPA Contract No. 68-01-3436, Austin, Texas, August 1977.

RA-R-671 Environmental Protection Agency, Region IV, *Greensboro-Guilford County, North Carolina Horsepen Creek Interceptor*, Draft Environmental Impact Statement, EPA Project No. C37036901, Atlanta, Georgia, September 1978.

APPENDIX A

WRITTEN COMMENTS ON THE DRAFT EIS

FORREST E CAMPBELL, CHAIRMAN
BERT A HALL, VICE CHAIRMAN
OGDEN DEAL
GASTON D FAISON
J. ROBERT LANDRETH, JR.

GUILFORD COUNTY
Board of County Commissioners
P. O. Box 3427
Greensboro, North Carolina 27402

JOHN V WITHERSPOON
COUNTY MANAGER
WILLIAM B TREVORROW
COUNTY ATTORNEY
ANNIE F PARHAM
CLERK TO BOARD

November 20, 1978

Mr. John White, Regional Administrator
Region IV
Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30308

Dear Mr. White:

On behalf of the Board of County Commissioners of Guilford County, I request that this letter be made part of the record of the November 20, 1978, Public Hearing on the "Draft Environmental Impact Statement, Greensboro-Guilford County, North Carolina, Horsepen Creek Interceptor, EPA Project No. C37036901".

Our general reaction to the Draft's conclusions is contained in my oral presentation at the Hearing. I have attached a written copy of those remarks.

More specifically, I have listed below items contained in the Draft about which we have serious concerns:

-We feel the use of 70 gallons per day per capita is too low in computing flow projections.

-The assumption that all industrial waste by-passes the Stage Coach Trail Lift Station is erroneous.

-Wastewater generation from the Brush Creek Basin (The Cardinal Corp. System) to the north should be handled by the Horsepen Lift Station rather than retaining the Brush Creek Station in such close proximity to the proposed System.

-The System should be designed to accomodate flows from the Airport Terminal Complex (60,425 gpd by 1985, 153,000 gpd by 1995).

-According to flow figures provided recently by the City of Greensboro fron on-site monitoring efforts, the 2E System as described in the Draft could not accomodate today's flow, much less "limited" growth in the future.

-The Draft should incorporate, in much more concise terms, the mitigating measures for secondary impacts available to and utilized by local government, i.e., Zoning Ordinance, Watershed Designation, Subdivision Control Ordinance, PTCOG's "Regional Land Development Guide", Thoroughfare Plan, Planned Unit Development (cluster) Zone, Open Space Program, pending Stormwater Management Ordinance, City-County Water and Sewer Extension Agreement.

-The Treatment capabilities of the Lake Townsend Filter Plant should be more fully addressed.

-The Federal mandate to ultimately eliminate the use of leaded gasoline should be addressed in the discussion of projected lead loading levels in Lake Brandt.

We are disappointed with EPA's selection of a "limited" growth alternative. We, in Guilford County can, and have, certainly attempted to direct and regulate growth, but as the Draft points out, the Basin will continue to develop long after Alternate 2E has reached capacity. Will we then be in the same predicament in which we find ourselves today?

We respectfully request that the longer-term impact of Basin development be fully considered before a final decision is made by your Office.

Sincerely yours,

Forrest E Campbell

Forrest E. Campbell, Chairman
Board of County Commissioners
Guilford County

FEC/ba
Attachment

REMARKS FOR ENVIRONMENTAL IMPACT STATEMENT HEARING
HORSEPEN CREEK INTERCEPTOR SEWER LINE
November 20, 1978

Gentlemen, we have reviewed the Draft Environmental Impact Statement and are very concerned about the wisdom of the decision to select a less than adequate sewer system.

It has been our position since 1966 that this Interceptor Sewer System be designed to accomodate the existing and full future development of the Basin. This remains our position today.

The EIS acknowledges the poor suitability of soils in the Basin to accomodate properly functioning septic tanks. We agree with this fact.

The EIS states that full development of the Basin will occur eventually no matter the existence, configuration or capacity of any public sewer system. We agree with this conclusion.

The EIS assigns detrimental impacts to Lake Brandt from malfunctioning septic tanks. The EIS points out the sprawl and inordinate consumption of open space in the Basin associated with development on septic tanks. We agree with these conclusions as well.

We strongly disagree with the Document's inference that local government has an inadequate desire and/or regulatory tools to greatly mitigate many of the secondary impacts created by full Basin development on public sewer.

Available to us locally is the City-County Water & Sewer Extension Agreement which provides policy and direction for managing these services. Since 1964, we have utilized our zoning authority to regulate types of development. In fact. our Planned Unit Development Zone which was specifically designed to protect watershed areas and create open spaces will not work under a septic tank development scenario. We have our Subdivision Ordinance and our Erosion and Sedimentation Control Ordinance. A Stormwater Management Ordinance is presently under consideration. The County and Greensboro Planning Departments, in conjunction with the Regional Council of Governments, have been, and remain, involved in long range planning for the area. Thoroughfare planning in the area has been accomplished in conjunction with the City and Department of Transportation.

Our record clearly indicates a vital local concern for water quality. Many of our developmental zones are specifically geared to regulate watershed development. We have long discouraged the location of "wet" industries in our community.

It is, in fact, this concern for Lake Brandt that we feel that if the Basin is to eventually develop fully, then that development should be placed on public sewer rather than septic tanks.

We are convinced that the decision to knowingly install a less than adequate system will have grave consequences, both environmentally and financially, for us in the future.

EPA DOES HAVE THE OPTION TO ENDORSE A MUCH MORE SOUND CONCEPT. WE, THE LOCAL LEADERS OF GOVERNMENT, ASK THAT YOU SUPPORT AND ASSIST US BY EXERCISING THAT OPTION. YOU SHOULD SELECT A SYSTEM WHICH WILL MUCH BETTER MEET OUR FUTURE NEEDS AND AFFORD LONGER-TERM PROTECTION THAN THE ALTERNATE CHOSEN IN THE DRAFT ENVIRONMENTAL IMPACT STATEMENT.

FORREST E. CAMPBELL, CHAIRMAN
BOARD OF COUNTY COMMISSIONERS
GUILFORD COUNTY

ATTACHMENT II
FORREST E. CAMPBELL

HORSEPEN CREEK INTERCEPTOR SEWER

On Monday, November 20th, the Environmental Protection Agency will hold a Public Hearing in the Greensboro Coliseum Complex Auditorium.

The purpose of the Hearing is to allow interested parties to comment on the Draft Environmental Impact Statement on the Project.

Attachment 'A' in this package shows the five (5) Alternative Configurations considered by EPA. Each Alternative could be sized to serve future (F) or or existing (E) development.

Local government, the Piedmont Triad Council of Governments and, to a great degree, the State, preferred Alternate 1F. This was the System originally proposed in 1966.

EPA has chosen 2E (see Attachment 'B'). Note the pipe diameters of EPA's proposed System!

Alternate 1F is estimated to cost $2.4 million. Alternate 2E is to cost $1.38 million.

EPA pays 75% of the cost, the State pays 12½% and the County pays 12½%.

Attachment 'C' is a letter to EPA's Administrator which chronicled our efforts to date to get the Project going.

When EPA's Administrator visited Greensboro, he alluded to his impression that local government had neither the tools nor desire to properly regulate growth in the Horsepen Basin. Attachment 'D' is our response to the Administrator's concerns.

In late September of this year, it was determined, from actual measurements in the field, that Alternate 2E as proposed by EPA was grossly undersized to serve even existing development. City computers and engineers predicted the EPA system would not only fall short of State construction standards, but would over flow on the first day of operation.

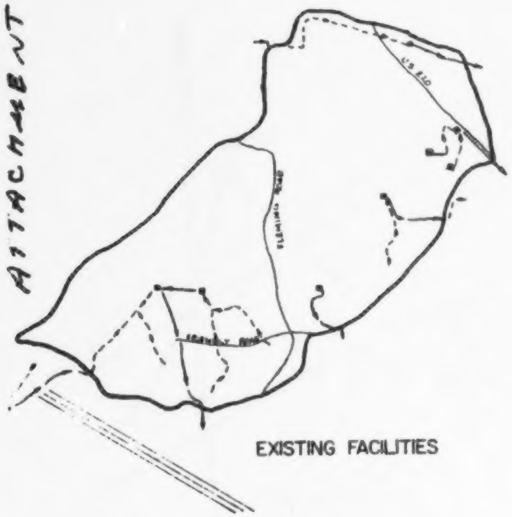
This information was immediately communicated to EPA and the issue has yet to be resolved. A November 14th letter from EPA's engineers indicates they stand firm on their preliminary calculations. They do concede that detailed engineering may necessitate some changes in their design.

Attachment 'E' is a summary of various County departments' reactions to the EIS.

Attachment 'F' points out the need for the System to handle the Airport complex.

Attachment 'G' is a Chamber listing of possible new industrial users on the System.

ATTACHMENT H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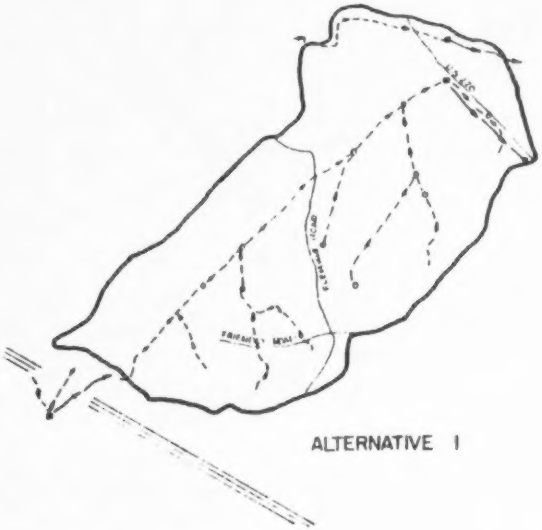
U.S. 220

EXISTING FACILITIES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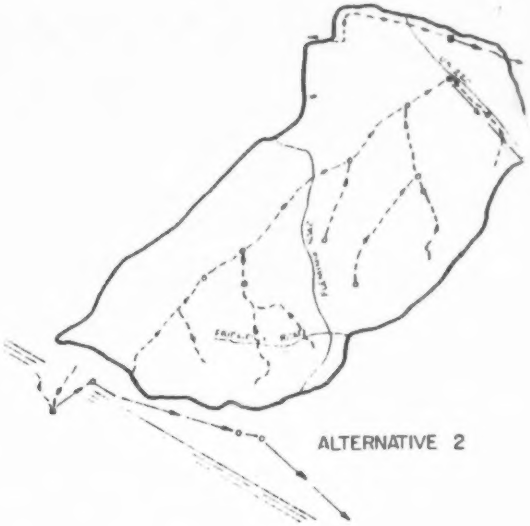
ALTERNATIVE 1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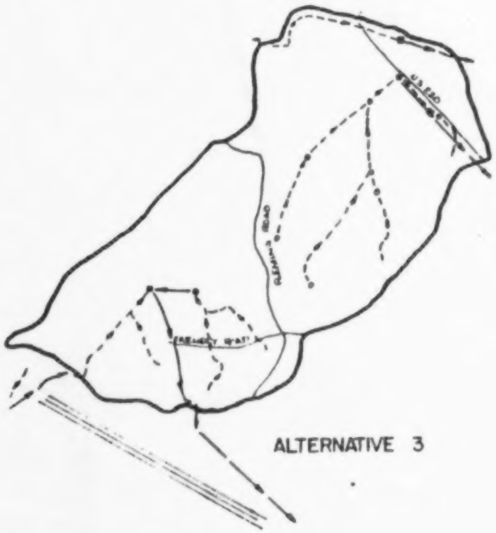
ALTERNATIVE 2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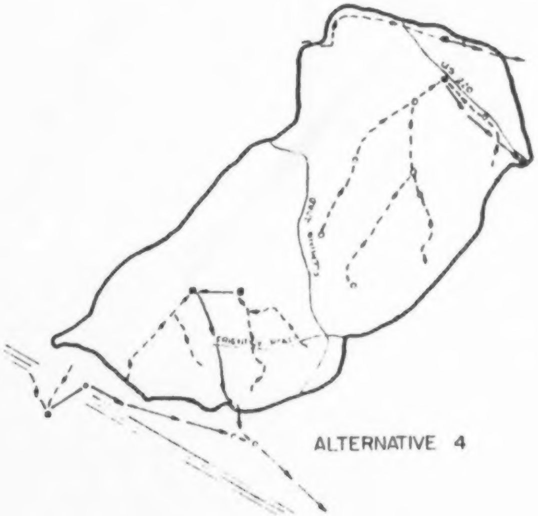
U.S. 220

ALTERNATIVE 3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FRIENDLY ROAD
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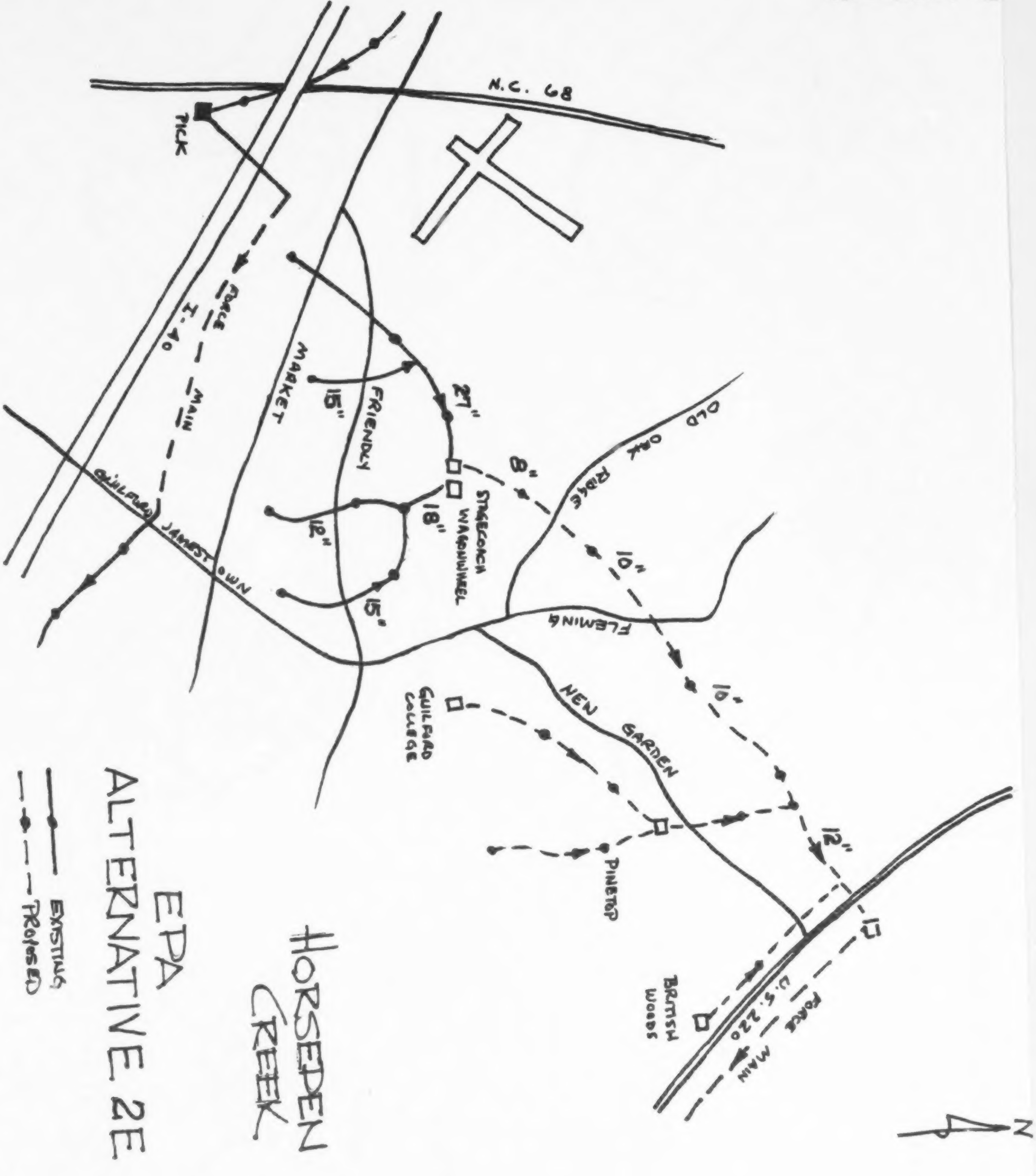
ALTERNATIVE 4

ALTERNATIVE 5 NO ACTION

■ LIFT STATION
—•— FORCE MAIN
– • – GRAVITY SEWER

HORSEPEN CREEK
SEWER ALTERNATIVES

Attachment B


N.C. 68
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OLD OAK RIDGE
10"
10"
GUILFORD JAMESTOWN
FLEMING
NEW GARDEN
GUILFORD COLLEGE
PINETOP
12"
13
BRITISH WOODS
U.S. 220
FORCE MAIN
N
EXISTING
PROPOSED

EPA ALTERNATIVE 2E

HORSEDEN CREEK

Larry - read & file
Attachment 'C'

GUILFORD COUNTY

ADMINISTRATIVE OFFICES

GREENSBORO, N. C.
27402

June 6, 1978

Mr. John White
Regional IV Director
Environmental Impact Study Branch
U.S. Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30308

Dear Mr. White:

A memo is attached which recounts what might fairly be called "The Sorry Saga of the Horsepen Creek Outfall." When you visited with us on May 19, you may have left with the impression that we were sensitive about this project. The memo will provide you with an understanding of what lies behind our reactions.

Your mention of a 208 Study was the straw that broke our patience. At several points in the history of this project, the County (or the City in the case of Metro) was advised to embark on another course of action with the assurance that 208 would not be brought in later as an excuse for further delay. Since we experienced so many delays and changes in attitude on the part of E.P.A., I really was not too surprised when you brought 208 in on May 19. Upon reflection, however, I realize that it was your predecessor who gave this specific assurance and you are probably unaware of it. In all likelihood, you are probably not aware of the complete history of the Horsepen Creek Project. Therefore, the attached memo was prepared from our files. I only wish we had recorded all our conversations with officials of E.P.A., but then we were mere babes in the woods when this mess began.

Hopefully, you will reconsider your position on Horsepen and approve the County's recommendation of alternative 1F. We firmly believe in that project from both economic and environmental points of view.

Sincerely,

John V. Witherspoon
County Manager

Attachment

GUILFORD COUNTY

GREENSBORO, N.C.

June 5, 1978

MEMORANDUM

To: John V. Witherspoon, County Manager

From: Jim Rickards, Assistant to Manager/Operations

Re: Documentation of Progress (?) of Grant Application
for Horsepen Creek Interceptor Sewer Line

The assignment to document this project was no easy task. The files for the State and federal grants for this one Project consume 10¼" of file cabinet space.

An interesting comparison is to look at the $1.5 million Oak View Estates Project where we consciously did not apply for federal funds due to our Horsepen experience. We went only with the 25% State grant. That Project only consumes 3" of cabinet space and took only 43 months between Board authorization and project completion.

The Horsepen Project was first formally discussed in our 1966 Land Use Plan.

It was addressed in more detail in a 1967 Study prepared by Hazen and Sawyer.

It was one of the named projects in the Bond Referendum of 1971.

The following is a more detailed history of the Project beginning with the successful Bond Issue.

June 8, 1971 - Bonds approved by voters
October 6, 1971 - State advises to proceed with Grant application in anticipation of successful Statewide Clean Water Bond Referendum to be held May of 1972
November 1, 1971 - Commissioners adopt resolution to apply for federal funds
November 15, 1971 - Board votes to seek Engineering firm
January 17, 1972 - State and EPA determine all Project components are eligible for funding
February 15, 1972 - Council of Government approves Project
February 19, 1972 - Clearinghouse approves Project
February 22, 1972 - Application submitted
March 2, 1972 - Moore-Gardner retained as Engineers
March 15, 1972 - State acknowledges receipt of all application documents
May, 1972 - Clean Water Bond Referendum successful

September 5, 1972 - Concerned over delays State is experiencing in gearing-up to administer Bond funds, Guilford requests permission to proceed with Horsepen construction and receive grant funds on a retroactive basis

September 12, 1972 - State denies "retroactive funding" proposal

October, 1972 - State requests grant be resubmitted on new forms

November 24, 1972 - New application, working drawings and specs submitted to State

December 15, 1972 - State acknowledges receipt of new application and advises that only EPA approval of the State's "Interim Subbasin Plan" stands in the way of project funding

January 18, 1973 - State announces that State grants will be 12½% since EPA grant amounts were increased to 75%

April 9, 1973 - State announces its bond attorneys are concerned with referendum wording and no State monies will be forthcoming until problem has been resolved

April 27, 1973 - State Commission ranks Horsepen and Greensboro Metro Plant jointly as #1 priority in State

June 26, 1973 - State submits its "Interim Subbasin Plan" to EPA

July 31, 1973 - Greensboro Record headlines state Horsepen turned down by EPA because Interim Plan was unacceptable. News story was first indication to County that there was a problem. Fiscal year 72-73 funding deadline was August 1, 1973.

August 13, 1973 - State advises County that it was not informed of EPA's intent to deny Project and had yet to be informed

August 17, 1973 - Congressman Preyer informs County that he had "good news". EPA has assured him that "grant will be forthcoming in reasonable period of time".

September 5, 1973 - State reaffirms that Horsepen still #1 priority in State and that State will push for grant

September 10, 1973 - EPA states Greensboro Metro and Horsepen Projects must be combined as one Project

September 13, 1973 - EPA meets in Raleigh with State, County and City officials, investigation shows that reason State Plan was disapproved was due to absence of requested supporting documents. Turned out documents in question had been sent and received by EPA

November 15, 1973 - State ranks Metro/Horsepen as #1 priority in State for F.Y. 73-74 funding

January 7, 1974 - Environmental Assessment Hearing held

January 11, 1974 - County retains Moore-Gardner to prepare Environmental Assessment Statement

January 16, 1974 - State Office of Environmental Planning states it has just heard of Horsepen Project and requests detailed update

January 21, 1974 - Commissioners adopt new resolution applying for increased grant amounts due to inflationary increases resulting from delays

February 6, 1974 - 201 Hearing held

February 28, 1974 - State approves revised cost figures and increases grant amount

April 30, 1974 - EPA tells State it will approve grant if Greensboro gives written commitment that level of treatment at S. Buffalo Plant will be improved

May 5, 1974 - Completed Environmental Assessment Statement submitted to State

May 8, 1974 - Greensboro sends written commitment to State regarding treatment at S. Buffalo Plant

August 12, 1974 - EPA approves working drawings and specifications, instructs County to advertise for bids

August 19, 1974 - EPA submits official grant offer

August, 1974 - Environmental Coalition files suit against EPA requiring an EIS

September 3, 1974 - Commissioners accept grant offer

September 6, 1974 - County advises EPA it will join EPA in litigation

September 18, 1974 - EPA telephones County and instructs Guilford to hold off on advertising for bids until further word

September 19, 1974 - County receives executed grant agreement from EPA

September 23, 1974 - EPA counsel advises County to refrain from advertising for bids until litigation is more settled

All of 1975 spent in litigation

February 17, 1976 - EPA Administrator meets with State, City and County and advises that EPA will settle out of court by preparing an EIS and that both Metro and Horsepen will be addressed in same Statement. EPA to prepare Scope of the Work and select consulting firm as soon as possible.

August 19, 1976 - State advises that Clean Water Bond Fund almost exhausted by other projects and balance cannot be held in trust for Horsepen awaiting EPA's EIS

September 21, 1976 - RADIAN retained by EPA. RADIAN states it will take six months to complete EIS

July 12, 1977 - EPA states that Horsepen EIS is far from completion and that previous decision to have one Statement for both Projects will be reversed. EPA will proceed with Metro first, then prepare a separate Statement for Horsepen.

July 13, 1977 - County appeals decision and requests that Horsepen retain joint priority. Appeal denied.

September 1, 1977 - Metro EIS Hearing held

March 15, 1978 - EPA meets with County to review EIS draft

April 3, 1978 - Commissioners express preferred Alternative as #1F

April, 1978 - Greensboro Council express preferred Alternative as #1F

May 19, 1978 - EPA Administrator meets with interested parties and advises that he is "leaning toward" Alternative #2E or No Action

May 23, 1978 - Mayor and Chairman jointly request Administrator reconsider decision

JR:lfm

75

UPDATE OF JUNE 5, 1978 MEMO
HISTORY OF HORSEPEN

June 26, 1978 - Administrator states he will not reconsider and has decided on "2E".

July 24, 1978 - County requests EPA to advise as to date of Hearing.

September, 1978 - City of Greensboro monitors actual wastewater flows in Horsepen System.

September 27, 1978 - Greensboro Engineer advises RADIAN has made miscalculation in sizing System. System will over flow first day of operation.

October 4, 1978 - County & City advise EPA of RADIAN miscalculation. EPA schedules Hearing for November 20th.

October 5, 1978 - EPA official visits Greensboro. Delivers EIS Draft. Staff requests meeting with RADIAN to discuss miscalculation.

October 23, 1978 - County again requests meeting to discuss miscalculation. Reminds EPA of Airport and potential industrial flows.

November 6, 1978 - Chairman Campbell writes Administrator. Requests EPA/RADIAN reaction to Greensboro's findings.

November 9, 1978 - RADIAN responds to Greensboro findings in writing.

November 14, 1978 - EPA agrees to meeting on afternoon of 20th to discuss findings.

Attachment 'D'

FORREST E. CAMPBELL, CHAIRMAN
BERT A. HALL, VICE CHAIRMAN
OGDEN DEAL
GASTON D. FAISON
J. ROBERT LANDRETH JR.

GUILFORD COUNTY
Board of County Commissioners
P. O. Box 3427
Greensboro, North Carolina 27402

JOHN V. WITHERSPOON
COUNTY MANAGER
WILLIAM B. TREVORROW
COUNTY ATTORNEY
ANNIE F. PARHAM
CLERK TO BOARD

May 23, 1978

Mr. John White, Regional Director
U. S. Environmental Protection Agency, Region IV
345 Courtland Street
Atlanta, Georgia 30308

Dear John:

Thank you very much for the interest you have shown in our Horsepen Creek Interceptor Sewer Project. We appreciate your taking the time to personally come to Greensboro and hear both sides of the argument.

We sincerely believe that either of the alternatives which you mentioned-you were leaning toward would be a mistake. And, very respectfully, we believe that your staff is unaware of all of the factors which play a part in this project. As an example we would point out the following facts:

1. The City and County have had in effect, since 1965, a joint agreement that defines the area which we would serve with water and sewer and thus helps to control and/or direct growth insofar as possible.

2. The County has since 1964 had zoning authority in this area. It has exercised subdivision controls since 1965. One condition of this subdivision control involves the requirement that flood plains are to be designated as easements. This is similar to the City requirements and even a cursory trip around the City would indicate how effective this has been.

3. Greensboro and Guilford County were among the first to adopt soil erosion and sediment control ordinances. These have been in effect since 1975 and are more stringent (and better enforced) than the State's requirements.

4. Effective July 1, 1978, the County will enforce regulations dealing with permanent downstream protection of stream banks and channels and control of stormwater runoff.

5. The City and County, by resolution adopted June 2, 1977, asked the Corps of Engineers to make an Urban Water Resources Study for this area. This, as we understand it, would dovetail into any future 208 planning but would save some of the time involved.

6. Both the City and County have indicated repeatedly that every effort would be made to promote and channel growth into the area East and Northeast of the City. However, we are realists enough to know that it will take time to change this growth direction. With the construction of Metro we will be in a position to intensify our efforts in this direction but frankly we feel that much development will take place in the Horsepen basin prior to this change. Provision for this limited growth is essential.

7. As discussed during our meeting the Pick pumping station is on the High Point watershed. All of the problems associated with it which would be true on the Greensboro watershed would also be true with this location.

8. The local share for this project is to be provided by general obligation bonds. This bond issue was overwhelmingly approved by the voters of Guilford with the Horsepen Project being named as one of the major endeavors for which the funds would be used.

9. The Piedmont Triad Council of Governments has endorsed the Project as being in keeping with regional plans and, in fact, PTCOG's "Regional Land Development Guide" recognizes the project and plans for it accordingly.

There was much conversation concerning 208 planning and the fact that this had not been started in this area. Very frankly we believe that our land use planning, density control, and workable pollution control is further advanced than that in the Raleigh-Durham area where 208 planning has been proceeding for some four years. Further, we would certainly intend to perfect our additional controls in accordance with better planning whenever a workable model is shown. So far we have not seen that. However we have, as mentioned above, requested the Corps of Engineers to make a study and this request has been approved.

We would like to remind you that very recently both the City Council and Board of County Commissioners, by a formal vote, reaffirmed their commitment to the project as being in the best interest of their citizens.

In view of the above facts and in order to handle our situation in the best possible way we respectfully request that you designate alternate 1F as the preferred alternate.

Again thank you for your help and your obvious desire to do the best job possible for everyone concerned.

Sincerely,

Forrest E. Campbell
Forrest E. Campbell
Chairman
County Commissioners

Jim Melvin
Jim Melvin
Mayor

cc: Honorable Richardson Preyer

Attachment 'E'

GUILFORD COUNTY

ADMINISTRATIVE
OFFICES

GREENSBORO, N. C.
27402

MEMORANDUM

October 25, 1978

To: John V. Witherspoon, County Manager

From: Jim Rickards, Assistant to Manager/Operations JR

Re: Staff Comments - Horsepen Draft EIS

Planning

-RADIAN use of 70 gallons per day per capita is too low.
-Proposed action (2E) will not accommodate existing development.
-No attention given to serving industrially-zoned, undeveloped land in Deep River Basin.
-"Mitigating Measures" chapter implies that septic tank regulations are not strictly enforced. No documentation to support implication.
-EIS cites need for thoroughfare plan in Basin. Thoroughfare Plan was adopted by N. C. Board of Transportation on June 6, 1977. It provides for Airport-Benjamin Parkway linkage.
-No mention of Planning Board policy (adopted May 11, 1977) not to recommend residential densities greater than 20,000 $ft.^2$/d.u.

Soil Scientist

-EIS employs superfluous "filler material" such as discussions of endangered species of wildlife and sensitive plants when none are known to inhabit basin.
-RADIAN use of 70 gallons per capita per day is low.
-10%-15% of precipitation infiltrating to cause ground water recharge is probably overly optimistic.
-Adoption of a Basin Stormwater Management Plan could mitigate much of the potential threat to Lake Brandt.

Operations

The 2E configuration:
-Does not provide for the new airport terminal or other airport facilities.
-Does not provide for a tie-in at the U. S. 220 North lift station for the flow from Cardinal.
-Does not address the ability of the Pick lift station to pump the much greater distance to the South Buffalo Outfall.

-Does not address the provision for potential flows from existing, but temporarily unoccupied industrial facilities.
-The Draft actually projects that after the System has reached capacity that an additional 6,620 persons (2000 dwelling units) will have to utilize septic tanks when it also states that the Basin's soils are unsuitable for long-term septic tank use.
-The Draft does not address what will happen should existing (on-line) industrial/commercial users desire to expand their facilities or go to two or three shift operations.

In all probability the capital and O & M cost projections are inaccurate if the present 2E configuration is faulty.

The Draft states excavation depths for pipes will be from 5 to 10 feet. We have already determined that if EPA remains with present pipe diameters the depths will go to 20 feet over a length of 5,000 feet.

The Section, "Existing Water Quality and Trophic State of Lake Brandt" (pg. 64) is filled with conjecture and assumptions. Phrases like, "...Should be carefully examined...", "...It is possible...", "Sources...unknown", "It is probable...", etc. It appears that the Draft is attempting to address a subject about which insufficient research was conducted.

Due to the apparent miscalculations by RADIAN on 2E sizing, I feel their references to the existing system as being "grossly oversized" now have doubtful credibility.

We have yet to receive EPA's reaction to Greensboro's findings on actual flows in the Basin. I intend to call Harold Duhart this week to find out what's going on.

JR/ba

file

Horsepen Creek

Binder

Attachment 'F'

GUILFORD COUNTY

ADMINISTRATIVE OFFICES

GREENSBORO, N. C.
27402

October 23, 1978

Mr. Harold Duhart, Project Manager
North Carolina Section
Water Division
U. S. Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30303

Re: Horsepen Creek Interceptor Sewer Line
Project C370369, Guilford County

Dear Mr. Duhart:

As a followup to my letter to you of October 4th I wanted to advise your office of additional factors which should be addressed as you review our findings on current flows in the Horsepen System.

Besides the additional flow which will be generated by "limited" future residential growth as well as existing homes in the basin presently on septic tanks, the Airport Authority anticipates discharging an additional 60,425 gpd into the Horsepen System by 1985. Maximum flow from the Airport will reach 153,000 gpd by 1995.

The City's monitoring figures do not reflect any generation from the presently vacant American Can Company facility. However, the Chamber informs me that a new potential firm may occupy this structure. The firm will employ about 250 persons and will generate only domestic waste.

I will submit letters from the Airport Authority and Chamber verifying these projections shortly.

I hope this additional information will be of some help.

Yours truly,

Jim Rickard

Jim Rickards
Assistant to Manager/Operations

JR/ba
cc: John V. Witherspoon, County Manager
Greensboro Chamber of Commerce
Airport Authority
Ray Shaw, City of Greensboro
Larry Harvell, Director of Environmental Services

Greensboro Chamber of Commerce
Post Office Box 3246. 217 North Greene Street. Greensboro, North Carolina 27402. Telephone 919 275-8675

Larry
Bill in Horsepen
Attachment 'G'

November 10, 1978

Mr. James C. Rickards
Assistant to Manager-Operations
Guilford County
Post Office Box 3427
Greensboro, North Carolina 27402

Re: Horsepen Creek Interceptor Sewer

Dear Jim:

In earlier correspondence you requested information on industrial growth in the Horsepen Creek basin, particularly in the airport area.

As you are well aware, the airport area is the primary focus of the community's industrial development activity. Only through continued expansion of industry and business in that area can our community continue to maximize employment opportunities for all residents.

A number of firms have recently announced plans to locate in the area which will increase significantly sewage system capacity requirements.

1. The Weyerhaeuser Company has moved into a new 80,000 square foot distribution facility from an older building within the same area of about 15,000 square feet.
2. The Limitorque Corporation has a new building under construction where over 100 will be employed within one year.
3. George Sharpe is completing a 40,000 square foot distribution facility, a portion of which is now occupied. We anticipate over 40 employees at that location.
4. Several major national concerns have recently reviewed the American Can Company building on American Avenue. Two of these firms have a real interest in the building's availability; the smallest would employ a minimum of 250.
5. While not directly in the basin, the decision by Rockwell International to consolidate its Rockwell-Draper Division at the Carolina American Textile building with over 300 employees is illustrative of the type of success the community is having in its industrial development activities.

We are most concerned that EPA restrictions on full and proper development of the Horsepen Creek basin will restrict our ability as a community to provide employment opportunities for all residents. Such action by EPA would, of course, conflict with the President's directive of maximizing employment opportunities in our urban areas.

ACCREDITED

Your efforts to ensure that an interceptor sewer is constructed which is adequate to serve both existing and future development in the Horsepen Creek basin while eliminating the health hazards of lift stations and septic tanks is most appreciated. The Chamber will continue to assist you and other public agency officials and employees in any way we can to achieve this objective.

Sincerely,

Allan Johnston, Manager
Community Development

City of
Greensboro

Date: Sept. 27, 1978

To: Ray Shaw

From: Don Knibb

Subject: Horsepen Creek Outfall

The pipe sizes as recommended by EPA for the Horsepen Creek Drainage Basin have been checked. A computer model was constructed for the main outfall from the existing Stage Coach Trail Lift Station to the proposed Horsepen Creek Pumping Station.

The flow capacities as provided by Holland and Macklin (EPA) were checked to determine the grade they proposed for each line. Most grades thus determined were found not to conform to minimum grades as published by the State Board of Health.

We then had Moore, Gardner and Assoc. take the proposed line sizes and prepare a profile that would meet State standards. This put the line very deep, in places 20 feet. Moore, Gardner estimates the construction cost of the lines would be $1,197,000. This does not include side lines 3, 5, 6, 7, 9, 10, or 11.

We input the most recent loading of each lift station with zero growth and found that all line sizes proposed by EPA were inadequate. In fact, our computer model shows that on the first day the new system is put in service, the system will overflow and a parallel line costing $695,000 will be required to correct the problem.

Using the same existing load we have selected pipe sizes that will handle the load flowing 2/3 full and meet the minimum grade requirements. Moore, Gardner and Assoc, estimates the cost of the main trunk of this line at $658,000.

Additional engineering is required to complete the design and costing of the lines connecting the lift stations to this main outfall. The USGS topo maps to a scale of 1" = 2000' are totally inadequate for this purpose because long flat sections along the creek bottoms may be missed.

The sizes developed by the city fail to meet the stated objectives of the recommended plan, E-2, because zero growth has been used in choosing the sizes.

Page 11, paragraph 6 of the Radian report shows a projected population increase of 10,620. Using Radians 70 gpcd, which is significantly less than the present blend of development provides, a growth load of 743,400 gpd (516 gpm) ave. flow should be added. An additional design was made adding this flow in proportion to available land. These sizes are shown in the attached table.

Don

Don Knibb

g
attach/

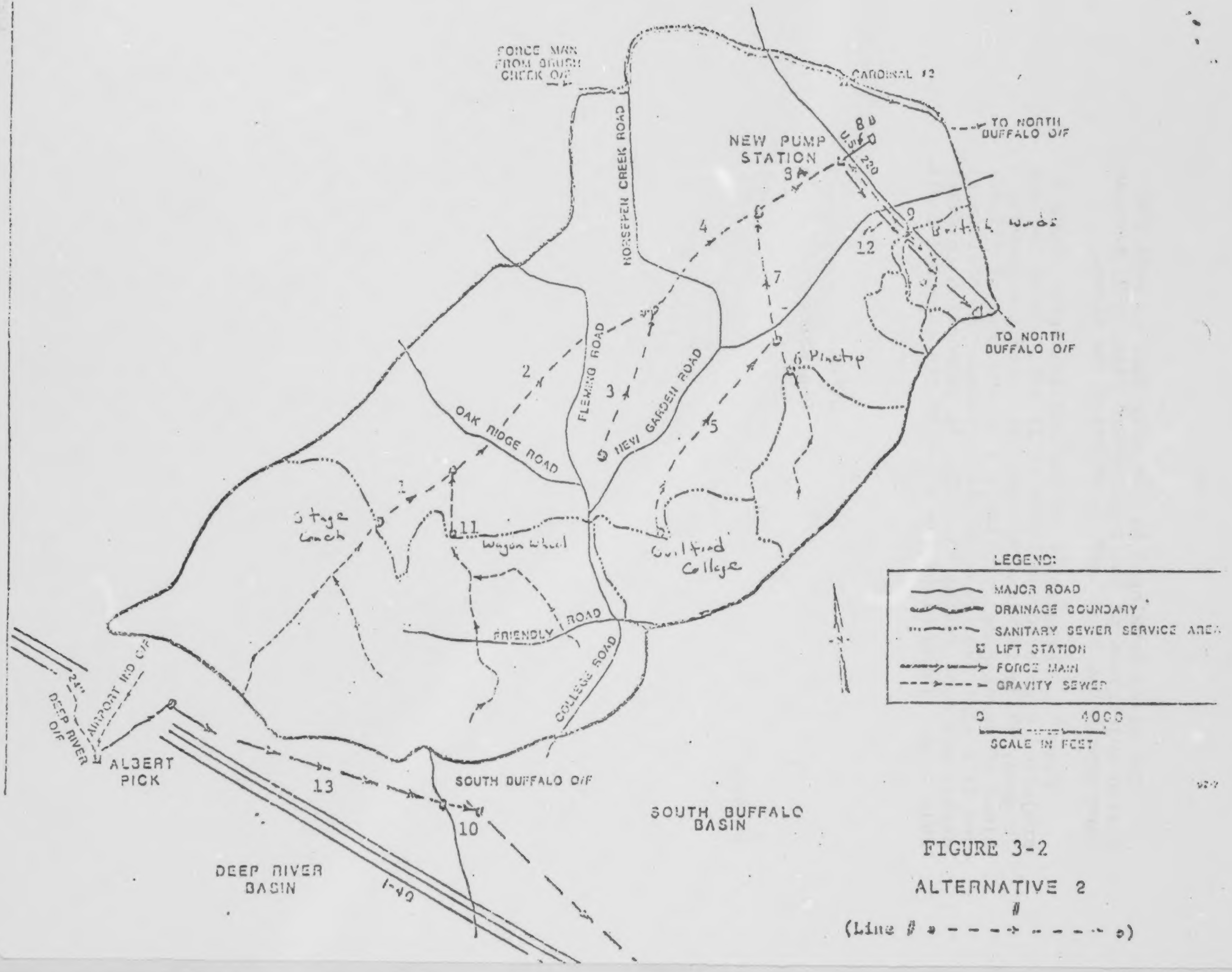
FORCE MAIN FROM BRUSH CREEK O/F
CARDINAL #2
TO NORTH BUFFALO O/F
NEW PUMP STATION
8
U.S. 220
9
British Woods
12
TO NORTH BUFFALO O/F
HORSEPEN CREEK ROAD
FLEMING ROAD
NEW GARDEN ROAD
OAK RIDGE ROAD
4
7
6 Pinetop
2
3
5
1
Stage Coach
11
Wagon Wheel
Guilford College
FRIENDLY ROAD
COLLEGE ROAD
AIRPORT IND O/F
24"
DEEP RIVER O/F
ALBERT PICK
13
SOUTH BUFFALO O/F
10
SOUTH BUFFALO BASIN
DEEP RIVER BASIN
I-40
LEGEND:
MAJOR ROAD
DRAINAGE BOUNDARY
SANITARY SEWER SERVICE AREA
LIFT STATION
FORCE MAIN
GRAVITY SEWER
0
4000
SCALE IN FEET

FIGURE 3-2

ALTERNATIVE 2

(Line # - - - - → - - - -)

HORSEPEN CREEK INTERCEPTOR

All flows in cu. ft. per second

						CITY OF GREENSBORO DESIGN						EPA ALTERNATIVE E-2		
						ZERO GROWTH			MIN. RADIAN GROWTH					
LINE	CONTRIBUTING LIFT STATION	DATE	EXISTING LOAD MIN.	MAX.	AVE.	DESIGN FLOW*	PIPE SIZE	2/3 FULL FLOW	DESIGN FLOW	PIPE SIZE	2/3 FULL FLOW	SIZE	FLOW BY HOLLAND	FLOW BY MACKLIN
1	Stage Coach	8/29/78	.33	1.21	.60	1.20	8	1.48	1.53	10	1.74	8	.204	.690
2			.54	2.31	1.21	2.42	15	2.48	3.30	18	3.67	10	.612	.711
3									.49	10	.76	8	.101	.970
4			.54	2.31	1.21	2.42	18	3.67	3.87	21	5.56	10	.714	.789
5	Guilford College	9/6/78	.15	.51	0.22	.44	8	.51	.51	8	.51	8	.371	.862
6	Pine Top	9/12/78	.09	.38	.23	.46	8	.59	1.37	12	1.76	8	.371	.683
7			.24	.89	.45	.90	12	.80	1.88	15	2.26	10	.301	.690
8	A		.78	3.20	1.66	3.32	21	3.91	5.75	27	7.60	12	1.112	1.185
	B		.81	3.67	1.88	3.76	21	3.91	6.41	27	7.60			
9	British Woods	9/20/78	.03	.47	.22	.44	10	0.48	.66	12	0.82	8	.309	1.296
10	Albert Pick	8/29/78	.37	.10	.21	.42	10	.70	.42	10	0.70	10	1.422	1.380
11	Wagon Wheel	9/29/78	.21	1.11	.61	1.22	12	1.24	1.85	15	2.25	8	.408	.711

* Design Flow = 2 x Ave. Flow

REALTOR®

Greensboro Board of REALTORS,® Inc.

1403 Sunset Drive
P. O. Box 9907
Greensboro, North Carolina 27408
Telephone (919) 373-0962

HORSEPEN CREEK INTERCEPTOR SEWER

11/20/78

I'm Fred L. Clapp of Greensboro Board of Realtors and have been authorized by its Board of Directors to enter the following statement into the record.

We will not join the technical issue of correct line sizes, believing that all agencies involved are properly motivated and possess the requisite engineering skills necessary to satisfactorily resolve this matter.

It is our understanding, however, that, regardless of the eventual line size, it is EPA's intent to sewer only the existing population plus providing limited additional capacity. The proposed action, we believe, will adversely affect housing and quite possibly the economic stability of the community.

This summer, the Special Task Force on Housing Costs appointed by the Secretary of Housing & Urban Development pinpointed excessive government regulations as a major contributor to the current high cost of housing. The National Association of Realtors estimates that over regulation currently adds approximately 20% to housing costs, or about $9,000 to the cost of today's median priced new house. Inasmuch as trends in existing home prices closely follow those of new ones, such over regulation affects all potential home buyers. In response to the study, HUD Secretary Harris has announced, among other actions already underway, that HUD will work with state and local governments for reasonable standards for land development and in planning for an adequate supply of usable land. We submit that the proposed action is an example of such over regulation and will necessarily increase the cost of housing by increasing the minimum lot sizes and prices and increasing the development costs for additional streets, power, telephone and gas lines, etc. The low density development proposed will also severely restrict, if not deny, the developer's ability to effect the economies of building clustered housing or "patio" homes and attached "townhouses for sale" and apartment dwellings.

In the marketplace, the desirability of residential development in our northwest section has already been established and we are all agreed that eventual full development of the basin will occur even on septic tanks. This low density proposal, however, will further restrict the supply and cost of land in a market already characterized by a tightly controlled supply of land. Further, in such a low density development it will be more costly for the community to maintain essential public services such as transportation, schools, recreational facilities, etc. The resulting increased costs must necessarily be borne by the taxpayers through increased property taxes and therefore again increase the cost of maintaining a home.

At a time in our history when low-income families have already been forced from the private housing market and we are rapidly pricing middle-America out of the private housing market, the impact of the proposed action on housing costs should not be ignored.

The most serious economic implication of the proposed action to the entire community is the implied restriction on industrial development. We admit to confusion and frustration about the rather casual treatment of industrial development in the EIS. It is elementary and fundamental that sound industrial growth is necessary to provide employment opportunities and to expand the tax base in order to be able to maintain a reasonable level of local taxation. Substantial public and private investment has already been made in the airport industrial area and it would be fiscally irresponsible not to fully utilize the facilities and land provided by such investment. EPA's consultant states that "any future industrial development in the basin will not be eligible for sewerage funding by EPA" and the proposed action would apparently divert all industrial sewage to the South Buffalo plant. Yet the consultant claims that (industrial) "development is limited primarily by the size of the collector and outfall sewers in the South Buffalo basin" and that "system modifications necessary to sewer future industrial growth and the airport will require at a minimum replacing the major collectors and outfall sewers to the South Buffalo treatment plant." The cost of such action would appear to be greatly in excess of that of the Horsepen Creek interceptor itself and would presumably be entirely the expense of the community. The proposed action therefore appears to directly and indirectly impose extreme limitations on the community's ability to provide for a desirable expansion of industry.

The adverse impact on housing and industrial development resulting from the proposed action are not in the best interests of the community. We submit that the community will best be served by the selection of Alternate 1F which basically would provide full sewer service to the entire basin.

We are not unmindful of the potential hazards of development within any watershed. However, we are not persuaded by the EIS that the low density dispersal of housing and the addition of 2,000-2,500 septic tanks to the basin is the proper way to handle development.

The EIS addresses itself to the introduction of pollutants into Lake Brandt, but is silent concerning the technology of removing pollutants by water treatment methods. The EIS on the one hand addresses itself to lead loadings in Lake Brandt from automobiles associated with development in the basin and on the other hand ignores existing government regulations that require us to drive less effecient more expensive cars that are restricted to unleaded gasoline.

In an area of soils poorly suited for septic tank use, it would seem a reasonable probability that the addition of 2,000-2,500 septic tanks to the north section of the basin would in time cause health problems that could only be corrected by a public sewer system and, it would certainly be more cost efficient to provide the system now rather than 20 years from now.

The EIS concedes that "many of the measures required to promote orderly development of the Horsepen Creek area and preserve the water quality of Lake Brandt already exist." Indeed, one condition of the grant is that an erosion and sedimentation control plan must be submitted to EPA for approval. County regulations dealing with the control of storm water run off are under study. The Board of Realtors believes that the County and City can and will implement adequate measures for orderly development and we will support and cooperate with such reasonable measures as may be required. We submit that local governments are the proper authorities to control land use and development regulations within local boundaries.

We further submit that the community must finally recognize the fact that Lake Brandt cannot be indefinitely counted upon as a major water supply source, and within the 20 year design period, we must look beyond our present water storage system for an adequate water supply.

On balance, therefore, we cannot support the proposed action as being in the best interests of the community. We urge the Director to reconsider the recommendation and support Alternate 1F.

Statement of
Rhodes T. Corbett, Vice Chairman
Council on Economic Development
Greensboro Chamber of Commerce
Presented
Monday, November 20, 1978
At An
EPA Public Hearing
On the Draft Environmental Impact Statement
for Wastewater Facilities in the Horsepen Creek Basin

I am Rhodes Corbett, Vice Chairman of the Greensboro Chamber of Commerce Council on Economic Development. I am here to state our concern about the potential adverse economic impact of an interceptor sewer improperly sized for the Horsepen Creek basin.

The basin is the community's primary growth area. Its population exceeds 8,000. By the year 2000 the population is expected to exceed 18,000. It is also the community's primary industrial growth area. In the properties near the airport over 3,000 acres are zoned for industrial use. Over 600 acres are currently used for industrial purposes. The 2,400 available acres of industrial zoned land constitute the community's largest single concentration of such property and consequent new job opportunities.

According to the Draft EIS, there appear to be constraints placed upon commercial and industrial development, with prior reports having suggested a limitation of 210 acres of commercial development and 150 acres of industrial development being allowed by the year 2000. This type of land use decision can best be made by the appropriate local governments in response to demand for such land and a consideration of the community's best interests. Any limitation of commercial or industrial acreages on an arbitrary basis by any federal agency is inappropriate. Such a position by any federal agency would be contrary to the President's National Urban Policy objective of creating new jobs in our urban areas. In addition, such arbitrary decisions are not consistent with the President's policy of establishing a new "urban partnership" between the public sector and the private sector which will foster the creation of new jobs.

In summary, the Chamber takes the following position:

1. Responsible public agencies should construct a sewer adequate to serve existing and future development since the area continues to be the most desirable area for residential and related development.
2. Continued industrial development in the airport area is essential to the economic strength of the community and to creation of new jobs.
3. Local governments are the appropriate agencies for exercising development decisions as to the extent and type of land use to be allowed within the basin.
4. There appear to be reasonable alternatives to protect Lake Brandt for the period of time which it will continue to be needed as a water supply reservoir.

Let me again emphasize what our Chamber of Commerce President Charles Melvin said: If EPA does not concur in the Chamber's position, then we urge that an agreement be reached between EPA and Guilford County to provide an interceptor sewer and other wastewater collection system facilities sufficient to serve an appropriate level of development consistent with a meaningful cost-benefit analysis of land development and related factors within the Horsepen Creek basin.

Thank you.

FORREST E. CAMPBELL, CHAIRMAN
BERT A. HALL, VICE CHAIRMAN
OGDEN DEAL
GASTON D. FAISON
J. ROBERT LANDRETH, JR.

GUILFORD COUNTY
Board of County Commissioners
P. O. Box 3427
GREENSBORO, NORTH CAROLINA 27402

JOHN V. WITHERSPOON
COUNTY MANAGER
WILLIAM B. TREVORROW
COUNTY ATTORNEY
ANNIE F. PARHAM
CLERK TO BOARD

November 27, 1978

Mr. John C. White
Regional Administrator
Region IV
United States Environmental
Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Mr. White:

I want to reiterate my personal view that water quality and reasonable environmental concerns should be the priority consideration in planning for the future of the Horsepen Basin in Guilford County. I also ask that the following points be made a part of the record.

1.

A vast majority of the undeveloped land in the basin is zoned A-1 - Agricultural. This gives local government the opportunity to encourage low density growth by a commitment to retain current zoning patterns.

2.

If development pressures in the area persist, and if full urban services are provided, annexation should be undertaken at an early date. Indeed, I am becoming convinced that the county and city water and sewer policies have, in general, encouraged and subsidized urban sprawl with the resultant deterioration of the inner city of Greensboro.

3.

Even though the soils of the Horsepen Basin are not the best for optimum septic tank operation, the soils there are generally superior to the soils in the southern area of the county where high density growth has already taken place. Areas such as Forest Oaks, Lynnwood Lakes, and some parts of Sedgefield have serious septic tank problems which clearly indicate that the local governments have, in some instances, not done a particularly good job in planning or regulation of growth and development. Further, the communities of Mt. Zion and Franklin Boulevard have had serious water and sewer problems for decades. Even though these problems have not been dealt with in a concerted, effective manner, I believe existing problems should be dealt with first. The policies of the past should be changed, where necessary, to prevent repeating the mistakes of the past.

4.

Just recently, Guilford County and the City of Greensboro have agreed to expend $1.5 million in public monies to provide water and sewer to the Reedy Fork Basin, which is downstream of the municipal water reservoir northeast of Greensboro. This action opens up thousands of acres to industrial, commercial, and residential growth. At least two thousand acres can be initially served by this extension. Opening this vast new area to development, with virtually all urban type services, should alleviate much of the developmental pressures in the environmentally sensitive Horsepen Basin. This should be particularly true for industrial growth. Indeed, a recent survey by the Chamber of Commerce shows that 91.3% of the 128 members surveyed desired that industrial growth take place outside the northwest quadrant. (This, of course, is taken out of context, as was the references to the same survey at the hearing of November 21; therefore, I am enclosing the entire survey results for your information.) Also enclosed is a copy of the soil survey of Guilford County, which documents the various soil types in our area.

Please consider these matters when making your final decisions on the Horsepen Basin dilemma.

Sincerely,

Ogden Deal
Guilford County Commissioner

Enclosures

Mr. Deal

Greensboro Chamber of Commerce
Post Office Box 3246. 217 North Greene Street. Greensboro, North Carolina 27402. Telephone 919 275-8675.

November 9, 1978

To: Board of Directors

From: Larry Roland, Chairman
Ambassadors Club

Enclosed is the tabulated results of the Ambassadors Club survey for 1978. The survey was conducted during the three day period of September 12 - 14. A total of 23 volunteers conducted personal interviews with 211 randomly selected Chamber members to determine their expectations and desires regarding community-wide development over the next five years.

A structured questionnaire was used during the interviews. The questionnaire was developed in cooperation with the Councils on Economic Development, Community Development and Planning, and the City and County Planning Departments. The results are representative of the opinions of 95% of our members within a 4% margin of error.

An open-ended question regarding the area's strengths and weaknesses is not being reported at this time as it requires additional analysis. Likewise, a question regarding local labor market deficiencies requires additional analysis although we are reporting the basic results to you.

NOV 29 1978

ACCREDITED

Question:

How long have you lived in the community?

Total Responses	211 (100%)
Less than one year	7 (3.3%)
1-5 years	32 (15.2%)
6-10 years	23 (10.9%)
11-15 years	24 (11.3%)
more than 15 years	113 (53.6%)
not a resident	12 (5.7%)

Question:

How long have you lived in your present location?

Total Responses	211 (100%)
Less than 1 year	19 (9.0%)
1-5 years	69 (33.5%)
6-10 years	27 (12.5%)
11-15 years	32 (15.0%)
more than 15 years	58 (27.2%)
not a resident	6 (2.8%)

AGE (Estimated)

20-40 years	67 (33.0%)
41-60 years	120 (59.1%)
61-70 years	13 (6.4%)
over 70 years	3 (1.5%)

(Total number of respondents whose ages were estimated is 203.)

Question:

In which quadrant do you live?

	Total	Northeast	Southeast	Southwest	Northwest
City	145	12 (8.3%)	1 (0.6%)	14 (9.7%)	118 (81.4%)
County	51	5 (9.8%)	7 (13.7%)	21 (41.2%)	18 (35.3%)
Combined Totals	196	17 (8.7%)	8 (4.1%)	35 (17.9%)	136 (69.4%)
Demographic Analysis					
Age Group					
20-40 years	56	6 (10.7%)	2 (3.6%)	13 (23.2%)	35 (62.5%)
41-60 years	116	10 (8.6%)	6 (5.2%)	19 (16.4%)	81 (69.8%)
61-70 years	13	1 (7.7%)		2 (15.4%)	10 (76.9%)
over 70 years	3			1 (33.3%)	2 (66.7%)
ages unknown	8				
Length of Residence in Community					
Less than 1 year	6		1 (16.7%)	3 (50.0%)	2 (33.3%)
1-5 years	32	1 (3.1%)	1 (3.1%)	5 (15.6%)	25 (78.2%)
6-10 years	23	2 (8.7%)	1 (4.3%)	2 (8.7%)	18 (78.3%)
11-15 years	24	2 (8.3%)	5 (20.8%)	3 (12.5%)	14 (58.4%)
more than 15 years	111	12 (10.8%)		21 (18.9%)	78 (70.3%)

Question:

How long have you been with this company?

Total Responses - 211

		Respondent's Age Analysis			
		20-40 years	41-60 years	61-70 years	over 70
Less than 1 year	9 (4.3%)	6 (75.0%)	2 (25.0%)		
1-5 years	50 (23.7%)	30 (60.0%)	18 (36.0%)	2 (4.0%)	
6-10 years	40 (19.0%)	17 (45.9%)	20 (54.1%)		
11-15 years	26 (12.3%)	8 (29.6%)	18 (66.7%)		1 (3.7%)
more than 15 years	86 (40.7%)	7 (8.6%)	61 (75.4%)	10 (12.3%)	3 (3.7%)

Question:

Please look at this list. If you agree the "quality of life" would include the items listed, please rate the importance of each item to you. You may add any items you wish.

	Total Responses	Very Important	Important	Not Important
Cost of Living	211 (100%)	126 (59.7%)	81 (38.3%)	4 (2.0%)
Cultural Opportunities	211 (100%)	87 (41.2%)	120 (56.8%)	4 (2.0%)
Educational Facilities				
Grades K thru 12	211 (100%)	174 (82.5%)	32 (15.2%)	5 (2.3%)
Post High School	188 (100%)	113 (60.1%)	66 (35.1%)	9 (4.8%)
Environmental Matters	211 (100%)	82 (38.9%)	127 (60.1%)	2 (2.0%)
Health Care	211 (100%)	141 (66.8%)	68 (32.2%)	2 (2.0%)
Housing	209 (100%)	105 (50.3%)	96 (45.9%)	8 (3.8%)
Personal Safety	211 (100%)	137 (64.9%)	67 (31.8%)	7 (3.3%)
Quality of Local Government	210 (100%)	160 (76.2%)	50 (23.8%)	0
Recreation	211 (100%)	65 (31.8%)	140 (66.4%)	6 (2.8%)
Shopping	211 (100%)	58 (27.5%)	139 (65.9%)	14 (6.6%)
Transportation	210 (100%)	60 (28.6%)	118 (56.2%)	32 (15.2%)
Variety of Occupational Opportunities	195 (100%)	100 (51.3%)	80 (41.0%)	15 (7.7%)

Question:

In your opinion, has the quality of life improved, remained unchanged, or deteriorated during the period you have lived in the community?

	Total Responses	Improved	Remained Unchanged	Deteriorated
	205 (100%)	148 (72.2%)	24 (16.6%)	23 (11.2%)
Demographic Analysis				
Age Groups				
20-40 years	66	44 (66.7%)	17 (25.8%)	5 (7.5%)
41-60 years	122	91 (74.6%)	16 (13.1%)	15 (12.3%)
61-70 years	12	8 (66.7%)	2 (16.6%)	2 (16.7%)
over 70 years	3	2 (66.7%)		1 (33.3%)
Length of Residence in Community				
Less than 1 year	6	2 (33.3%)	4 (66.7%)	
1-5 years	32	16 (50.0%)	15 (46.9%)	1 (3.1%)
6-10 years	23	18 (78.3%)	3 (13.0%)	2 (8.7%)
11-15 years	24	18 (75.0%)	5 (20.8%)	1 (4.2%)
more than 15 years	111	90 (81.1%)	5 (4.5%)	16 (14.4%)
not a resident	9			
Location of Present Residence				
City	142	104 (73.2%)	21 (14.8%)	17 (12.0%)
County	54	37 (68.5%)	12 (22.2%)	5 (9.3%)

Question:

As an annual average, how many employees does your firm have in Guilford County, less High Point and Jamestown?

Total Responses	208 (100%)
Less than 10 employees	82 (39.4%)
11-50 employees	85 (40.9%)
51-100 employees	20 (9.6%)
more than 100 employees	21 (10.1%)

(note: 12 respondents reported employees in ranges from 115 to 5000)

Question:

Will you express an opinion as to what percentage of your employees live: (in Greensboro, in Guilford County, in another county)

Total Responses - 207

In Greensboro	61.5% (average of all respondents)
In Guilford County	30.2% (average of all respondents)
In Another County	8.3% (average of all respondents)

Question:

If an area around the presently developed Central Business District were rezoned to provide a Greenbelt of modern townhouses, as shown on the map, would you consider living in this Greenbelt?

	Total Responses	Yes	No
	207 (100%)	60 (29.0%)	147 (71.0%)
Demographic Analysis			
Age Groups			
20-40 years	64	22 (34.4%)	42 (65.6%)
41-60 years	119	34 (28.6%)	85 (71.4%)
61-70 years	14	2 (14.3%)	12 (85.7%)
over 70 years	2		2 (100%)
Length of Residence in Community			
Less than 1 year	7	3 (42.9%)	4 (57.1%)
1-5 years	32	9 (28.1%)	23 (71.9%)
6-10 years	22	7 (31.8%)	15 (68.2%)
11-15 years	24	4 (16.7%)	20 (83.3%)
more than 15 years	110	34 (30.9%)	76 (69.1%)
not a resident	12	3 (25.0%)	9 (75.0%)
Location of Present Residence			
City	145	45 (31.0%)	100 (69.0%)
County	51	13 (25.5%)	38 (74.5%)

Question:

(IF "NO") Would another type of housing in this area appeal to you?

Total Positive Responses - 14

(Preference was for single family dwellings)

Question:

Here is a list of possible uses to aid in downtown revitalization. Which of these uses appeals to you and might attract your patronage? You may add your suggestions to the list.

	Total Responses	Yes	No
Apartments	180 (100%)	77 (42.8%)	103 (57.2%)
Banks	180 (100%)	121 (67.2%)	59 (32.8%)
Consumer Finance	171 (100%)	84 (49.1%)	87 (50.9%)
Entertainment/Arts	202 (100%)	181 (89.6%)	21 (10.4%)
Insurance	176 (100%)	116 (65.9%)	60 (34.1%)
Light Manufacturing	170 (100%)	53 (31.1%)	117 (68.8%)
Offices	184 (100%)	153 (83.2%)	31 (16.8%)
Restaurants	196 (100%)	186 (94.9%)	13 (5.1%)
Security Dealers	181 (100%)	132 (72.9%)	49 (27.1%)
Specialty Stores	193 (100%)	150 (77.7%)	43 (22.3%)

Question:

Do you feel the following items are functions of government in a downtown revitalization program?

	Total Responses	Yes	No	No Opinion
Zoning Reviews	211 (100%)	201 (95.3%)	4 (1.9%)	6 (2.8%)
Building Code Reviews	211 (100%)	200 (94.8%)	5 (2.4%)	6 (2.8%)
Property Tax Structures	211 (100%)	184 (87.2%)	9 (4.3%)	18 (8.5%)
Actively Searching for Tenants	211 (100%)	91 (43.1%)	106 (50.2%)	14 (6.6%)
Direct Financial Subsidy	211 (100%)	64 (30.3%)	140 (66.4%)	7 (3.3%)
Tax Incentives	211 (100%)	169 (80.0%)	32 (15.2%)	10 (4.8%)

Question:

If all other factors were equal, would you prefer to park your car downtown in a parking garage or a surfact parking lot?

	Total Responses	Parking Garage	Surface Parking Lot
	178 (100%)	59 (33.1%)	119 (66.9%)
Demographic Analysis			
Age Group			
20-40 years	53	19 (35.8%)	34 (64.2%)
41-60 years	104	34 (32.7%)	70 (67.3%)
61-70 years	11	5 (45.5%)	6 (54.5%)
over 70 years	2		2 (100%)
Length of Residence in Community			
Less than 1 year	8	2 (25.0%)	6 (75.0%)
1-5 years	27	13 (48.1%)	14 (51.9%)
6-10 years	20	5 (25.0%)	15 (75.0%)
11-15 years	20	7 (35.0%)	13 (65.0%)
more than 15 years	97	28 (28.9%)	69 (71.1%)
not a resident	6	4 (66.7%)	2 (33.3%)
Location of Present Residence			
City	129	42 (32.6%)	87 (67.4%)
County	43	14 (32.6%)	29 (67.4%)

Question:

Please refer again to this map showing quadrant structure. In what quadrant would you prefer to see: (industrial growth, commercial growth, residential growth)

	Total Responses	Northeast	Southeast	Southwest	Northwest
Industrial Growth	128	52 (40.6%)	35 (27.3%)	30 (23.4%)	11 (8.7%)
Commercial Growth	113	36 (31.9%)	23 (20.3%)	32 (28.3%)	22 (19.5%)
Residential Growth	112	34 (30.4%)	12 (10.7%)	14 (12.5%)	52 (46.4%)
No Preferences	26				

Question:

Regarding sources of most of your services and supplies, are these sources located: (as listed below)

Total Responses	235 (100%)
Locally	79 (33.6%)
Within 50 miles	41 (17.4%)
Within the State	40 (17.0%)
Outside the State	74 (31.6%)
Unknown	1 (0.4%)

Question:

These statistics regarding employment are supplied by the Greensboro and Guilford County Planning Departments. They are for Guilford County, less High Point and Jamestown. Employment growth from 1960 to 1974 amounted to 96% over the 1960 figures. Estimated 1990 employment is 30% over the 1974 figures.

In your opinion, is growth of this scale desirable?

Total Responses	207 (100%)
Yes	159 (76.8%)
No	33 (15.9%)
No Opinion	15 (7.3%)

Question:

In your opinion, does the local labor market have a substantial deficiency?

Total Responses	206 (100%)
Yes	84 (40.8%)
No	100 (48.5%)
No Opinion	22 (10.7%)

Question:

At present, there are separate school administrations in Greensboro, High Point, and the rest of the county. In your opinion, should these administrations remain the same or be consolidated?

	Total Responses	Remain The Same	Consolidate
	191 (100%)	122 (63.9%)	69 (36.1%)
Demographic Analysis			
Age Groups			
20-40 years	52	30 (57.7%)	22 (42.3%)
41-60 years	118	77 (65.2%)	41 (34.7%)
61-70 years	11	7 (63.6%)	4 (36.3%)
over 70 years	2		2 (100.0%)
Length of Residence in Community			
Less than 1 year	6	3 (50.0%)	3 (50.0%)
1-5 years	28	23 (82.1%)	5 (17.9%)
6-10 years	23	14 (60.9%)	9 (39.1%)
11-15 years	24	12 (50.0%)	12 (50.0%)
more than 15 years	101	63 (62.4%)	38 (37.6%)
not a resident	9	7 (77.8%)	2 (22.2%)
Location of Present Residence			
City	136	90 (66.2%)	46 (33.8%)
County	49	32 (65.3%)	17 (34.7%)
Unknown	6		

Question:

At present, the Greensboro School Board is appointed. In your opinion, should the members of the Greensboro School Board be appointed or be elected?

	Total Responses	Be Appointed	Be Elected
	185 (100%)	90 (48.6%)	95 (51.4%)
Demographic Analysis			
Age Groups			
20-40 years	58	20 (34.4%)	38 (65.6%)
41-60 years	111	61 (55.0%)	50 (45.0%)
61-70 years	10	9 (90.0%)	1 (10.0%)
over 70 years	2		2 (100.0%)
unknown	4		4 (100.0%)
Length of Residence in Community			
Less than 1 year	7	1 (14.3%)	6 (85.7%)
1-5 years	28	13 (46.4%)	15 (53.6%)
6-10 years	21	9 (42.9%)	12 (57.1%)
11-15 years	22	11 (50.0%)	11 (50.0%)
more than 15 years	98	53 (54.1%)	45 (45.9%)
not a resident	9	3 (33.0%)	6 (67.0%)
Location of Present Residence			
City	136	78 (57.4%)	58 (42.6%)
County	50	13 (26.0%)	37 (74.0%)
Unknown	9	3 (33.3%)	6 (66.7%)

Question:

On a scale of one to ten (ONE is most unsatisfactory, TEN is most satisfactory), how would you rate your firm's experience with local government regarding regulations, services, and taxes?

Regulations - Total Responses - 191

Rating
1 - 4 (2.1%)
2 - 2 (1.0%)
3 - 2 (1.0%)
4 - 6 (3.1%)
5 - 20 (10.5%)

Rating
6 - 9 (4.7%)
7 - 22 (11.5%)
8 - 39 (20.4%)
9 - 25 (13.1%)
10 - 62 (32.6%)

Services - Total Responses - 190

Rating
1 - 2 (1.0%)
2 - 0
3 - 0
4 - 2 (1.0%)
5 - 12 (6.3%)

Rating
6 - 9 (4.7%)
7 - 21 (11.1%)
8 - 53 (27.9%)
9 - 33 (17.5%)
10 - 58 (30.5%)

Taxes - Total Responses - 186

Rating
1 - 5 (2.7%)
2 - 2 (1.0%)
3 - 5 (2.7%)
4 - 11 (5.9%)
5 - 33 (17.7%)

Rating
6 - 10 (5.4%)
7 - 18 (9.7%)
8 - 45 (24.3%)
9 - 19 (10.2%)
10 - 38 (20.4%)

No Experience - 10 (4.7%)

Question:

On the whole, do you feel local governments (city & county) encourage new business establishment & growth?

Total Responses	Yes	No
188 (100%)	165 (87.8%)	23 (12.2%)

11-20-78

STATEMENT TO EPA ON DRAFT EIS
(Horsepen Creek Basin Interceptor)

The National Audubon Society is an organization that since the early years of this century has stood for the conservation of all wildlife and other natural resources. We are working to eliminate unnecessary pollution, unwarranted destruction of essential wildlife habitats, the premature extinction of species, and the waste of our natural wealth in all its forms. We recognize and expect that for any long-range problem there may be proposed a solution which appears adequate but in reality is shortsighted and helps to create problems more serious than those it was supposed to deal with.

We are assembled tonight to carry out an important step in working through a situation of this type. We have to start by recognizing that the fundamental question is the quality of the water supply on a longterm basis for the city and surrounding area, rather than how much or what kind of 'growth' an area should have. So if there is a real possibility that some activity will reduce that water quality significantly, our plans must either compensate for or reduce that activity to an acceptable level.

It is no secret that when forests and fields become suburban and industrial real estate, the normal filtration and absorption function of the earth is both prevented by buildings and pavement and made more difficult by the presence of grease, gasoline, oil, battery acid, soot, and litter. This would occur whether or not the land were near a municipal water intake point, but obviously when this is the case the choices are much more significant.

For these reasons, and because of a cautious attitude toward development in the vicinity of any airport, we recommend that no action be taken that would in the long run tend to create water quality problems by increasing urban-type runoff immediately upstream from Lake Brandt. If this means that certain types of construction must be carefully restricted, we believe this limitation should be accepted by all concerned in the interests of their fellow citizens, and sewerage planning should be consistent with this aim.

Tom Duckwall

Tom Duckwall
T. Gilbert Pearson Audubon Chapter
5 Holly Crest Court
Greensboro, NC 27410
919-294-1240

DEC 4 1978

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

PEP ER-78/1052

OCT 27 1978

Mr. John C. White
Regional Administrator, Region IV
Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30308

Dear Mr. White:

This is in regard to your transmittal of October 5, 1978, requesting the Department of the Interior's review and comment on the draft environmental statement for Horsepen Creek Interceptor, Guilford County, North Carolina.

This is to inform you that the Department will have comments but will be unable to reply within the allotted time as we have just received the additional copies of the draft statement which are necessary for our Departmental review.

Our comments should be available by late December.

Sincerely,

Bruce Blanchard

Bruce Blanchard, Director
Environmental Project Review

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

7100 Friendly Rd
Guilford College N.C.
27410
November 29, 1978

Dear Mr. White:

I was the person who read the statement of the Environmental Action Coalition at the hearing held in the Memorial Auditorium Monday evening Nov. 20, 1978. The hearing concerned the draft E.I.S. of project number C37036901 – Horsepen Creek Interceptor Sewer line. Because I had already held the floor on behalf of the E.A.C. It did not seem reasonable that I should try to take up additional time for a personal statement. At the same time I feel that you will give my written statement full consideration as promised at the hearing.

First, let me say that I am not an "Environmentalist." I am equally concerned about our environment and about how we will collectively provide essential services for the population and keep these in reasonable balance. I resent the fact that by innuendo and direct accusation I have been characterized as being against progress and against growth in the Horsepen Creek watershed. This is absolutely untrue! Such statements say a lot for their originator's integrity.

I think that it is obvious that present ordinances provide for growth in the area. If all future development were confined to lot sizes of R-40, that is nearly one acre, as required for lots with well and septic system, this would provide for a reasonable maximum growth considering that there will certainly be some one acre plots that will not allow for building on the one hand or for a septic system on the other hand. I have little doubt that some kind of system will be installed. I am asking that the E.P.A. require that no further lots can be developed of less than 1 acre as a mitigating condition for installation of the line.

If you have listened to the tapes or read the transcripts of the statements made at the hearing by the proponents of the line, you will note quickly that the speakers for the Chamber of Commerce, the Jay-Cees, the Builders Association, the City, the County all openly espoused one theme.

that there was full development. That was full and *impacted* development. They said it in no uncertain terms. They have made it very clear what *will* take place if adequate *restraints* are not *imposed now*.

There was much stress made for the position that local action can better handle this decision than action in Raleigh, Atlanta or Washington! Ordinarily I agree, but in this case all the people just mentioned constitute the group who will make such a decision and they made it plain to all just what that decision will be. If these people had really wanted to do the right thing in this matter, first off they would have joined the E.A.C. in demanding a full E.I.S. in 1974 when we had to bring suit to get one.

Secondly, the local governments would have moved swiftly and decisively to rectify some conditions that existed then and are still points on which the E.A.C. can legitimately criticize them. One of these criticisms is that the city has done little or nothing to *stop* intermittant overflow at at least two pumping stations on the present sewer line - especially at Jefferson road and 220 North (Britest Woods). The overflow from Jefferson road goes right into Lake Brant and the volume of raw-sewage that overflows in one mishap vastly exceeds all the overflow of the septic tanks in the area. This accounts for a large part of the pollution results measured in the lake. I can't understand why this fact has never been dealt with by the proponents.

Again the septic tank problem has been distorted - even lied about. True that soil condition affects septic systems, but close examination will prove to anyone who cares to examine it closely, that more problems exist from poorly or improperly installed systems than from soil condition. Since 1974 only one non-effluent system has been approved by the county health department. Other parts of the country have blazed the way for new and satisfactory individual septic system use and Guilford County sits on its hands. All this is really done to keep from admitting that there are ways to install workable systems. The E.P.A. has been remiss in not making a hard case of this. Obviously, had the County come up with a number of workable systems in the face of its protestations that a sewer line system is the only solution to water quality protection, it certainly would lose in its effort to get the giant interceptor.

Mr. Ray Shaw made an angry protest that the level of insoluble carcinogenic metals was insignificant and that technology exists for their removal. I say that as a public servant he is remiss in his duty. What he didn't say is that such systems are intricate - terribly expensive and that no plans or timetables whatever are set up by the city and county to handle this problem. His arguement is a fraud under present circumstances.

If you want to see the real reason that all this effort is being made to get a large interceptor in, come out to Guilford College and note that there are three realtors that have moved their offices to the area preparatory to taking the fullest advantage of this potential growth. I have no quarrel with that. Were I a realtor, so would I. What I am saying is that the land will be developed and the realtors will get their commissions, just fewer of them. The law of supply and demand will insure that development will take place, but thoughtful and careful people will see to it that the development is reasonable and productive for the long term and that the effort to protect the water supply will be maximized. I can't forget that Greensboro is the only city of its size in the east that is not situated on a river affording at least adequate volume of water for present and future use. I also am at total and continuous loss to understand why any government intentity would approve a waste disposal system that takes local water, some from its ground water table, and dump it 10 miles down stream when a reasonable portion could be put safely back in the ground.

May I suggest to you that I do not perceive the responsibility of the E.P.A. to insure that the realtors and developers can make more money or the most money by impacted development practices. They don't need protection – the rest of us do.

I am acutely aware that you have heard all these arguments before.

I suppose also that ~~[illegible]~~ I harbor only a faint hope that the wisdom of the points made will be fully appreciated and acted upon in a positive way, but it's that little ray of hope that prompts me to make one more plea.

Water supply is already Greensboro's and Guilford County's major social and community problem. Our leaders mouth some recognition but generally are saying one thing and acting another way.

I have left some previous hearings feeling that they were exercises in futility. The one on Mar 20 1978 was a good one and I appreciate your office seeing to it that it happened.

Respectfully,

Austin L. Elliott, Jr.

P.S. It was finally disclosed that there is more than 3000 acres of land in the upper Horsepen Basin zoned "industrial." Providing industrial development "waste disposal is not the legally stated purpose of this proposed sewer line.

Mr. Elliott

COMMENTS BY THE ENVIRONMENTAL ACTION COALITION ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AT THE PUBLIC HEARING ON NOVEMBER 20, 1978

THE ENVIRONMENTAL ACTION COALITION IS A GROUP OF LOCAL CITIZENS AND ORGANIZATIONS WHOSE MAIN CONCERN IS THE PRESERVATION OF THE WATER QUALITY OF THE LAKE BRANDT RESERVOIR. WE ARE NOT AGAINST ORDERLY GROWTH IN OUR COMMUNITY, BUT WE DO REALIZE THAT AN URBANIZED WATERSHED CAN BE HAZARDOUS TO THE HEALTH OF THOSE WHO DEPEND UPON IT FOR DRINKING WATER, AND GREENSBORO WILL BE DEPENDENT ON LAKE BRANDT FOR MANY YEARS TO COME.

IN 1974 OUR GROUP BROUGHT SUIT IN FEDERAL COURT AGAINST THE ENVIRONMENTAL PROTECTION AGENCY ASKING THAT AN ENVIRONMENTAL IMPACT STATEMENT BE PREPARED ON THE HORSEPEN PROJECT AS REQUIRED BY THE NATIONAL ENVIRONMENTAL POLICY ACT. NOW THE ENVIRONMENTAL IMPACT STATEMENT HAS BEEN PREPARED, AND THE RADIAN CORPORATION HAS MADE SEVERAL RECOMMENDATIONS TO EPA WHICH WE FIND HIGHLY SIGNIFICANT. MOST INTERESTING OF ALL IS THE RECOMMENDATION AGAINST FUNDING THE HORSEPEN PROJECT WITHOUT (AND I QUOTE) " A MORE DETAILED LONG-TERM STUDY OF INDUCED IMPACTS TO LAKE BRANDT." A COPY OF THESE RECOMMENDATIONS IS ATTACHED,SINCE IT DOES NOT APPEAR IN THE DRAFT ENVIRONMENTAL IMPACT STATEMENT.

A FEW MONTHS AGO WE WERE LOOKING FAVORABLY UPON THE SELECTION OF THE PROPOSED ACTION ALTERNATIVE (2-E). IT SEEMED TO US TO BE A REASONABLE COMPROMISE SINCE WE DO ACKNOWLEDGE A NEED FOR PROVIDING SERVICE FOR THE EXISTING INDUSTRIAL WASTEWATER IN THE AIRPORT AREA, AND THE PIPE SIZES IN THE RESIDENTIAL PART OF THE BASIN WERE PROJECTED TO BE QUITE SMALL. HOWEVER, SINCE THAT TIME THE CITY AND COUNTY HAVE CLAIMED THAT RADIAN'S CALCULATIONS ARE IN ERROR, AND THAT A PIPE PROJECTED TO BE 12 INCHES IN DIAMETER REALLY NEEDS TO BE 27 INCHES IN DIAMETER. THIS WOULD PROVIDE A FIVE FOLD INCREASE IN THE CARRYING CAPACITY OF THE PIPE. WHILE WE ACKNOWLEDGE THAT SMALL ERRORS IN PROJECTING PIPE SIZES COULD OCCUR AT THIS STAGE OF THE PROCESS, AN ERROR OF THIS MAGNITUDE SIMPLY DEFIES BELIEF.

THESE RECENT ACTIONS ON THE PART OF THE CITY AND COUNTY HAVE CAUSED US TO RECONSIDER OUR SUPPORT FOR ALTERNATIVE 2-E, AND WE NOW FEEL THAT THE BEST ALTERNATIVE IS THE MODIFIED NO-ACTION CONFIGURATION WHICH WOULD SIMPLY PROVIDE A NEW LINE FOR ROUTING THE INDUSTRIAL WASTEWATER FROM THE AIRPORT AREA TO THE NEW METRO PLANT BY WAY OF SOUTH BUFFALO. NORMAL GROWTH COULD PROCEED IN THE RESIDENTIAL PART OF THE BASIN ON SEPTIC TANKS INSTALLED UNDER MORE STRINGENT REGULATIONS.

WE FOUND THE SUGGESTIONS FOR MITIGATING MEASURES DESCRIBED IN CHAPTER 6 OF THE DRAFT E I S TO BE EXCELLENT, BUT UNFORTUNATELY THEY CARRY NO REAL WEIGHT, SINCE THEY DEPEND ON LOCAL GOVERNMENTS FOR VOLUNTARY IMPLEMENTATION. THIS IS A DISAPPOINTMENT TO US, SINCE LOCAL POLICY MAKERS HAVE NOT UP TO NOW EXHIBITED ANY GREAT COMMITTMENT TO THE PRESERVATION OF WATER QUALITY OR LAND USE PLANNING.

WE HAD HOPED THAT EPA WOULD BE ABLE TO BUILD IN MORE MITIGATING MEASURES AS "CONDITIONS OF THE GRANT." THE FACT THAT THEY DID NOT IS AN ADDITIONAL REASON WHY WE PREFER ALTERNATIVE 6 OVER THE PROPOSED ACTION.

IF THE ALTERNATIVE SELECTED INCLUDES PIPES WHICH ARE SIZED TO PROVIDE FOR MORE GROWTH THAN THE AMOUNT PERMITTED BY THE CLEAN WATER ACT, THEN THE ENVIRONMENTAL ACTION COALITION WILL INITIATE LITIGATION ON THE GROUNDS THAT THIS PROJECT IS NOT CONSISTENT WITH THE INTENT OF THAT ACT.

IN CLOSING, WE WOULD LIKE TO THANK THE ENVIRONMENTAL PROTECTION AGENCY FOR PROVIDING SO MANY OPPORTUNITIES FOR PUBLIC INPUT IN THE PROCESS OF MAKING THIS DECISION, WHICH IS OF VITAL IMPORTANCE TO US AS LOCAL CITIZENS.

Recommendations have been made principally on the basis of water quality-related aspects. They include:

1. EPA and the State of North Carolina should not include the proposed Horsepen Creek Interceptor in the 201 Facilities grant without a more detailed long-term study of induced impacts to Lake Brandt.

2. An interceptor that serves existing development only (including the airport) should be built to replace the inefficient, hazardous network of pump stations, force mains, and small collectors which now exists.

3. Future industrial development in this basin should be discouraged.

4. The County septic tank regulations should be strictly enforced in the initial siting and sizing of septic tank drainage fields.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

P. O. Box 27307, Raleigh, North Carolina 27611
Telephone (919) 755-4210

November 20, 1978

Mr. John E. Hagan III
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Mr. Hagan:

We have reviewed the draft environmental impact state for Horsepen Creek Interceptor, EPA Project No. C37036901.

Installing the Horsepen Creek Interceptor will likely encourage and speed housing development in the watershed of Lake Brandt which is a major source of raw water for Greensboro. Even though sewage disposal is provided, high density population can critically effect the lake unless zoning and other controls are initiated to protect water quality.

Soils in the watershed are Cecil, Madison, Enon, and Mecklenburg. All of these soils erode easily and contribute large quantities of sediment during the construction period if intensive sediment control measures are not installed. The erosion hazard is especially high for Madison soil. Specific measures for erosion control and for land treatment to stabilize disturbed areas are not spelled out in the draft impact statement. The plan should include measures to stockpile the topsoil during construction so that it can be used for the final covering of the disturbed areas.

The percentage of prime farmland within the watershed is low. Much of it is occupied by housing developments.

The Soil Conservation Service assists soil and water conservation districts in technical phases of their program. Consultant services consistent with work priorities established by the districts are available from the Service.

We appreciate the opportunity to review and comment on the draft EIS. Please send us a copy of the final statement.

Sincerely,

Glynn A Brown

for Jesse L. Hicks
State Conservationist

cc:
Director, Office of Federal Activities, Environmental Protection Agency, Room 537, West Tower, 401 M Street, S.W., Washington, D.C. 20460
USDA Coordinator of Environmental Quality Activities, Office of the Secretary, U.S. Department of Agriculture, Washington, D.C. 20250
R. M. Davis, Administrator, SCS, Washington, D.C.
J. V. Martin, Director, STSC, SCS, Fort Worth, Texas
S. G. Lane, Director, State Soil and Water Conservation Commission, Raleigh, N.C.
R. E. Powell, SCS, Burlington, N.C.
H. W. Robertson, SCS, Greensboro, N.C.

Statement of
Thomas E. Hubert, Chairman
Council on Community Development and Planning
Greensboro Chamber of Commerce
Presented
Monday, November 20, 1978
At An
EPA Public Hearing
On the Draft Environmental Impact Statement
for Wastewater Facilities in the Horsepen Creek Basin

My name is Tom Hubert. I'm Chairman of the Chamber's Council on Community Development and Planning. The Board of Directors has charged our Council with maintaining and improving the quality of life for all our citizens. We are proud of the quality and integrity of our local governments including both elected officials and staff.

We are appalled that the Radian Corporation would submit and EPA would accept such an incompetent document which is an expensive research paper paid for by us tax payers. The consultants did not consider existing conditions, did not utilize available topo maps, and did not bother to check the flow of existing lift stations.

In addition, we are very concerned that the federal government through EPA would attempt to dictate to local governments how to control their affairs. The innuendo that local government is incompetent and unable to properly legislate local land development ordinances is unfortunate to say the least.

These are not truths and we ask that EPA not make a decision based upon this incompetent document.

Now let me express the Chamber's concern about the relationship of this project to the community's development.

The Chamber has consistently supported the objective of providing an interceptor sewer sufficiently large to accommodate the ultimate development of the Horsepen Creek basin. The reasons for this position by the Chamber are several. First, the area will continue to develop as a consequence of reasonable economic forces--a demand for housing and industrial development in the basin. Second, a sizable investment in public and private facilities has already been made. The investment would be wasted if reasonable development is not permitted. Third, the area is the watershed for Lake Brandt. The sooner septic tanks and lift stations can be eliminated within the basin the sooner the community will be assured of protecting one of its valuable water supply reservoirs. Fourth, economy demands that the maximum size interceptor sewer consistent with development objectives and environmental considerations should be constructed now.

The Chamber finds a hindrance to achieving its objective in the Draft EIS. It appears that EPA is proposing to control the density of development within the basin. We believe this and related land use decisions are solely the responsibility of the appropriate local governments.

The Draft EIS suggests EPA prefers an alternative interceptor sewer which would accommodate existing development plus a limited amount of new development. In rough numbers this appears to convert to an interceptor sewer capable of handling the wastewater flow generated by the 8,000 existing residents plus approximately 4,000 additional residents by the year 2000. However, this leaves over 6,000 individuals who would have to be served by private sewer systems or be denied the opportunity to live in the Horsepen Creek basin.

We share EPA's concern for protection of Lake Brandt. We share EPA's concern that there be a reasonable density of development within the Horsepen Creek basin. We share EPA's concern about the adverse effects of septic tanks upon Lake Brandt. Consequently, we urge EPA to select an alternative which protects the water, allows a reasonable level of development, and eliminates existing septic tanks as well as prevents the need for future septic tanks. This would necessitate, as a minimum, an interceptor sewer of a sufficient size to accommodate the flow anticipated from the forecast population for the year 2000 of over 18,000 people.

Greensboro has good development because of responsible private developers and quality public leadership. Our community's planning has been good. The regulation of land use has been good. Growth will surely occur in the Horsepen Creek basin. The question before us all is how we can insure the continued high quality development of our community while at the same time protecting Lake Brandt. We believe the best way to do this is to get rid of the septic tanks. We need an interceptor sewer adequate to serve the anticipated level of development proposed to be permitted under city and county land use plans, policies and regulatory ordinances.

Thank you.

COMMENTS ON HORSEPEN CREEK INTERCEPTOR EIS

by John R. Jezórek
611 N. Mendenhall Street
Greensboro, N.C. 27401

A decision on the Horsepen Creek Interceptor Sewer has been a long time coming. One beneficial aspect of this slow process is that we in the County and EPA have had time to sit back and look at the project a little more closely in order to judge its merits. For my part, I am just as convinced as ever that this project will do more harm than good, i.e. the cost-benefit ratio is unfavorable. The more we learn about the long term effects of consumption of water with low levels of contaminants, the greater should be our resolve to do everything possible to maintain the purity of our water supply. Unfortunately, large scale development in the basin will work counter to that good.

Hopefully, the fact that EPA has recommended a sewer to serve existing needs plus only modest growth means that they see the necessity for limiting growth in the watershed. (It might be noted that the 1972 Federal Water Pollution Control Act limits use of Federal funds to modest growth plus existing needs. This money is not designated as a growth stimulator.) Growth limitation is the important point, however. The sewer of and by itself will not cause rapid growth in the basin. County policy is what determines this.

Expansion of the tax-base and the now shop-worn platitude that "people want to live out there" are not valid reasons for County policy to opt for complete basin development. We must take the prudent approach, because if we develop heavily, then find our water supply degraded, there is no easy remedy. Purification costs are astronomical. However, should we limit growth, and later find an inexpensive method of purifying our water, or that long-term effects are not as severe as now believed, we can always develop more densly. My own position remains that the "no action" or "modified no action" alternatives are most desirable. I can live with the "modest growth" alternative, 2-E, if I were to see a resolve on the part of the County to operate in this limited growth spirit. But should the County persist in claiming a need for a bigger or a second pipe so that development can proceed full-speed, then I cannot support this alternative. The suggestions made by citizens groups and individuals are a good place to start in minimizing the negative impact of development.

I recommend that the County seriously consider implementing these and other suggestions to preserve the quality of our drinking water, and take strong measures to steer growth to the east of the city.

STATEMENT

The Board of Directors of the Greensboro Jaycees supports the development of an adequate sewer system to serve the Greensboro-Guilford County community needs and rejects the recommendations of the EPA on economical, philosophical and practical grounds.

First, economically, the sewer system will open land surrounding the regional airport to commercial growth which will mean additional jobs created and stabilized by the presence of adequate and attractive commercial property. It should be noted that such property is not attractive to the consuming public as residential property, primarily due to aircraft noise levels. The former fact is important to us as a group of five hundred young men who live and work now and for the foreseeable future in this area. The second fact has historical proof both here in Greensboro over the last ten years and in numerous communities around the country.

Philosophically, the Jaycees contend that local decisions should be made by local officials who are accountable to the local electorate. Some direction, observation, and, if necessary, supervision should be forthcoming from the federal level in order to meet standards; we do not feel that this has been the rule on this issue. Nor do we feel that any increased involvement by the federal level of government on this specific issue or pursuant to the establishment of future growth policies for our community have any benefit. Our local governments have proved most capable of developing such policy and have a track record to prove it.

Thirdly, and finally, the Greensboro Jaycees reject the EPA position on practical grounds. We are satisfied that the projections by both studies indicate the unsuitable qualities of Guilford County soil for widespread septic tank usage. Additionally, it appears safe to say that the recommended twelve inch line would have difficulty serving existing development and certainly could not serve even some small additional development which is bound to occur. To argue that a sewer system or lack of one is sufficient to deflect established growth patterns is to ignore the personal, practical, economical, and, for lack of a better word, parochial, reasons which cause a person to choose his neighborhood.

For these reasons the Greensboro Jaycees support the development of a sewer system in the Horsepen Creek Basin, sufficiently capable of serving today's needs and the needs of tomorrow's growth. At the same time we desire zoning standards which will protect the Guilford County environment throughout the majority of the basin for residential growth while making areas adjacent to the airport and major transportation arteries attractive to quality industrial and commercial growth. This type of impact statement and pre-planning is essential to the orderly and necessary growth of our community if it is to safeguard the "quality of life" which makes Greensboro-Guilford County such an outstanding place in which to live and work.

More as a footnote than anything else, I might add that I believe I am the fourth Jaycee president to make such a statement in this matter, and in each instance, our organization has reopened our consideration of both sides of the issue, and right or wrong, taken the very same position.

Greensboro Chamber of Commerce
Post Office Box 3246. 217 North Greene Street. Greensboro, North Carolina 27402. Telephone 919 275-8675

November 22, 1978

Mr. John E. Hagan, III
Chief, EIS Branch
Environmental Protection Agency
345 Courtland Street, N. E.
Atlanta, Georgia 30308

Re: Draft EIS Horsepen Creek Basin
Project No. C37036901

Dear Mr. Hagan:

Attached is testimony regarding the subject wastewater facilities given by Greensboro Chamber of Commerce representatives at the public hearing held on November 20, in Greensboro. This includes the testimony of Chamber President Charles E. Melvin, Jr., Tom Hubert, Chairman of the Council on Community Development and Planning, and Rhodes Corbett, Vice Chairman of the Council on Economic Development.

We respectfully request that these statements be made part of the permanent hearing record.

In addition, we should like to receive as soon as it is available a transcript of the hearing.

We appreciate your continuing cooperation.

Sincerely,

Allan Johnston, Manager
Community Development

NOV 23 1978

FEDERAL ENERGY REGULATORY COMMISSION
REGIONAL OFFICE
730 Peachtree Street, N. E.
Atlanta, Georgia 30308
November 21, 1978

Mr. John E. Hagan III
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, NE
Atlanta, GA 30308

Dear Mr. Hagan:

This is in response to your letter dated October 5, 1978, with attachment, requesting our comments on the Draft Environmental Impact Statement for proposed Greensboro-Guilford County, North Carolina, Horsepen Creek Interceptor, EPA Project No. C37036901.

The Commission's principal concern in regard to developments affecting land and water resources is the possible impacts of such projects on the construction and operation of bulk electric power facilities and interstate natural gas systems.

In reviewing the DEIS, we noted nothing that should interfere with any of the Commission's licensed hydroelectric projects. However, provision should be made to protect electrical transmission lines and natural gas pipelines in the construction area.

We appreciate the opportunity to comment on your proposed project.

Very truly yours,

K. C. Bird
For Aarne O. Kauranen
Regional Engineer

NOV 22 1978

Statement by the League of Women Voters of Guilford County
November 20, 1978, Public Hearing on the Draft Environmental
Impact Statement, Horsepen Creek Basin portion of the
Greensboro Wastewater Management Plan, Project # C370[illegible]6901.

Mr. Chairman, members of the panel: the League of Women Voters if grateful for this opportunity to speak once more on the Horsepen Creek project.

The League of Women Voters of Guilford County has been involved with the fortunes (some would say 'misfortunes'!) of the Horsepen Creek sewer outfall proposal since January, 1974, when we took a stand against the project as it was then formulated at a public hearing on the initial Environmental Assessment Statement. The organization was sufficiently concerned with the probable negative secondary effects on the Greensboro water supply of urbanization---stimulated by the presence of a sewer outfall---in the Horsepen Basin to join the Environmental Action Coalition as a plaintiff in the August 1974 suit against the Environmental Protection Agency. That suit, asking that an Environmental Impact Statement be written on this action, began a chain of events of which this hearing is a culmination. It was, we believe, respOnsible for slowing the timetable on construction of the proposed outfall.

As a consequence some have pictured the League of Women Voters as part of a band of obstructionists and rabble rousers who were against motherhood and apple pie, and, more seriously, against growth. Let me say emphatically, the League of Women Voters does NOT endorse a "no growth" position! Indeed we believe, as do most of those assembled here tonight, in the growth of many things: knowledge, public participation in government, economic strength, the health and well-being of all citizens, and the improvement of our social and physical environment. But, where one good or desirable end conflicts with another, the League of Women Voters does contend that caution is necessary in relation to short-term gain. When short-term gain may jeopardize a resource without which we cannot long survive---water that is fit to drink---then delay in this project and any other of similar nature is essential.

Urbanization extracts a toll from the natural world, the size of which we have only recently begun to appreciate. During the months since the inception of this effort by the County, more scientific data has accumulated regarding the effects on water quality of non-point sources of pollution, especially that associated with urban areas. More information is at hand regarding the deleterious effects of heavy metals and a host of chemical compounds which are being found in city water supplies for the first time. Water quality monitering techniques are being extended to include new substances which had not previously been recognized as hazards to human health. The long-term debilitating consequences of some chemicals which accumulate in living tissue have also been identified. Perhaps, most importantly for Guilford County, the Commissioners have, during the last four years, taken certain steps which lay the ground work for a satisfactory growth management plan. Much remains to be done, but the stated policies of the Guilford County Board of Commissioners acknowledge the need for land use planning to protect fragile environments. An Open Space Program has been initiated.

Reproduced from best available copy.

A "Land Use Goals and Policies" statement has been adopted which indicates a concern for balancing development and environmental protection. Zoning and subdivision ordinances are in effect which should, if consistently applied, lead to a satisfactory population density and appropriate construction and design safeguards in the Horsepen Basin. The County's septic tank ordinance, strictly enforced, will be crutial in sustaining satisfactory water quality as development in that area proceeds. Many of these policies have evolved in the last four years.

For these reasons the League of Women Voters now favors Alternative 6, Modfied No Action, with its provisions for handling industrial effluent arising in the southwest portion of the Basin and maintaining the existing collection system in the eastern sector of the Basin. Low density residential development will proceed within the statutory guides described above. As suggested in the excellent section of the DEIS on "Mitigating Measures", a system for handling storm water run-off should be instituted and the water quality monitering system expanded. The inclusion of the County in North Carolina's Wastewater Management (208) Plan as indicated in Secretary Lee's letter of 6/28/78 to Mr. White, Region IV, EPA Director, will also provide guidance to several governmental units facing development in watersheds. This problem is certainly not unique to the Greensboro water supply lakes.

Finally since the inception of the Horsepen Creek project action has been taken to extend sewer service to the northeast of Greensboro. More dense development in this area made possible by the availability of sewer lines will relieve somewhat the pressures for growth to the northwest. In sum the League of Women Voters believes that the knowledge accumulated and the actions taken by County Government during the past four years have increased the likelihood that we may proceed with managed growth in the Horsepen Creek Basin and not, in the process, "kill the goose that laid the golden egg" by irreversibly polluting our water supply.

Carolyn S. Allen, President
League of Women Voters of Guilford C.
2611 David Caldwell Dr.
Greensboro, N.C. 27408

November 20, 1978

Comment on Environmental Impact Statement, Greensboro-Guilford County- Horsepen Creek Interceptor by Margie J. Levenson

As citizens we are grateful to the EPA for the studies necessary to complete this particular Environmental Impact Statement, for it points out the interrelationships between water quality and urbanizing lands adjacent to water reservoirs.

This document plainly states that it is not possible to have a future population of 18,000 in the Horsepen Creek Basin without deterioration of the Lake Brandt reservoir. However, considerable space in the document was given to measures which can be taken to lessen the impact of urbanization on the water quality of Lake Brandt.

There are many adverse effects of increased development in the Horsepen Creek Basin on Lake Brandt. The lake will have a heavier load of metals and phorphorus. The increased water run-off from driveways, highways, and yards will bring more sediment into the lake and more diverse pollutants. As more organic materials wash into the lake problems of odor and taste will occur.

But this deterioration in water quality can be lessened by instituting certain preventive measures as outlined in this draft for the Environmental Impact Statement.

First, a water monitoring program for Horsepen Creek and Lake Brandt must begin. Such a monitoring system would give early warning of problem areas where pollutants would be entering the stream and allow preventive measures to be taken.

Guilford County has nor regulations regarding storm water management. Storm water regulations are needed to lessen the pollutant loads into the reservoir by slowing down the run-off and allowing filtration into the ground.

Strict enforcement of the septic tank ordinances will see that lands which do not percolate properly are denied permits and that peptic tankds are properly located and installed.

When overflows of sanitary sewage occurs a health hazard exists. With the Horsepen Creek Sewer in the water shed future tie-ins to the interceptor must not be allowed to exceed the capacity of the design. This must require legal restrictions.

This document makes reference many times to the necessity for good land use controls in areas which are becoming urbanized. We commend our Guilford County Commissioners and the Planning Departmnet for their policy guidelines under the title "Land Use Goals and Policies". This publication sets forth excellent goals, but to implement these goals requires both adequate staff and money.

Presently, the Guilford County Planning Staff is lacking personnel in several top positions. This shortage of professional staff jeopardizes the adequate supervision and coordination of planning functions, but more importantly, a shortage in staff means a lack of time for planning for future land development.

Under Guilford County's Open Space Program it is most important that monies continue to be appropriated for the environmentally sensitive areas. Some of these areas will be in the watersheds and their careful management will contribute to the maintainence of good quality water.

This draft for the Environmental Impact Statement for the Horsepen Creek Interceptor clearly states that adequate land use controls are essential for the development of any alternative which is selected for the development of the Horsepen Creek Basin. Inasmuch as Alternative 2-E would allow improvements in the present situation, yet slower urban growth, I would favor this alternative.

Again, we thank the EPA for this document and the mitigating measures outlined for protecting the Lake Brandt reservoir and its water.

Mazie J. Levenson
3813 Parkwood Drive
Greensboro, N. Carolina

November 20, 1978

GUILFORD COUNTY
SOIL & WATER CONSERVATION DISTRICT
POST OFFICE BOX 1788
GREENSBORO, NORTH CAROLINA 27402
TELEPHONE. 378-5400

OUR SOIL ★ OUR STRENGTH

January 18, 1979

Mr. John Hagen III
Chief EIS Branch
345 Courtland St., N. E.
Atlanta, Ga. 30308

Re: EIS Horsepen Creek/
Greensboro Reservoir Watershed

Dear Mr. Hagen:

As a newly elected Guilford District Soil and Water Supervisor (taking office December 4, 1978) I have been reviewing the subject EIS.

I have previously communicated with Mr. Robert Cooper, (letter enclosed) pertaining to this matter, and forwarded the documents mentioned in my letter.

I note on the draft of Nov. 20, 1978 that comments are to be forwarded to your attention, therefore this letter addressed to you.

The official expression of the Guilford Soil and Water Conservation District are found in:

1. Long Range Program Guilford Soil & Water Conservation District, copy enclosed.

2. Annual plan of the Guilford County Soil and Water Conservation District. Since I am the only new Supervisor on the board (replacing Mr. Bowman). I agree to the official program signed by all Supervisors on March 3, 1976, copy enclosed, and make the official position of March 3, 1976 unanimous.

The other contents of this letter are the sole opinions and judgement of the writer as elected Soil and Water Supervisor, and as a practicing engineer with over 25 years experience in water supply, and water disposal.

Our comments are as follows:

1. We are unable to locate the documents and applications to be submitted for our review, as required by PL89-754,80 stat. 1261, 42 U.S.C. 3334 by Guilford County. As a result the official position of the Guilford Soil and Water Conservation District has not been included anywhere in the EIS.

OFFICE LOCATION: GUILFORD COUNTY AGRICULTURAL CENTER, 3309 BURLINGTON ROAD

2. Page 1 of the 20 Nov 1978,EIS

   A. Construct a treating plant at the Albert Pick (by private funds, tertiary design) and discharge to the Deep River Basin, which is only a few hundred feet from the Albert Pick.

   B. The erosion and sedimentation control plan should be submitted to the Guilford District Soil and Water Supervisors as required by N.C. Statute 139 as amended and to the Sedimentation Control Act enacted by the N.C. Legislature.

3. Page 3 of the Nov.20,1978 " Recommendations".

   A. Our district is engaged on a working 208 plan.
   B. The City /County oppose a run off control ordinance.
   C. No enforcement of county sub-division ordinances have been ,nor will be made due to "politics".
   D. No legal restrictions will be made on future tie-ins beyond sewer capacity. The past history of delibrate over-loading by sewercapacity in order to cry "wolf" for more funds and more sewer lines will again be initiated.
   E. Guilford County has no effective tank ordinance and does not want an effective ordinance passed.
   F. The N.C. State Association of Soil and Water Conservation Districts recommend that prime farmland(such as in the Horsepen Creek Watershed) be purchased as public preserves such as State Parks and the National Forest System.
   G. Preservation of water quality is the sole mandate of the Guilford District Soil and Water Conservation Supervisors ,as per N.C. General Statute 139, as amended.

Our comments on the Draft EIS of Aug,25th,1978 are as follows;

. The Guilford District of Soil and Water Supervisors did not have input into this draft,per N.C. 139 , and PL 89-754,80 stat. 1261,42 U.S.C. 3334.

2. Page xi. No mention is made of the amount of ground water available in Horsepen Creek watershed, nor the amount that will be withdrawn due to increase in populations.
   North Carolina General Statutes allow only one house per 40,000 sq.ft. without sewer ,(thus only one well). With sewers no restrictions are made and builders place 3 houses on 40,000 with 3 wells. Many studies have been made, including the Durham report, that this type of growth deletes the water table at a rapid rate. I estimate the water table to be depleted within 6 years if more growth takes place without additional water supplies being available to the area. The depletion of the water table will erase Horsepen Creek as a source of supply for the Greensboro water shed, as the water table feeds Horsepen Creek.

We take issue with the figures used as a base for the amount of water consumed per day per person , for current and future use, 70 gallons, thus determining the sewer size.
The nationally recognized standard of water consumption per person,per day as per The American Water Quality Association is 50 gallons per day. This figure is used nationally in the design of water conditioning equipment

and is a more realistic figure than the 70 gallons per day or the figure of 110 gallons per day used by Guilford County.
We therefore suggest that all sewer lines be reduced by 40 percent.

We appreciate your consideration of this letter and respectfully recommend that the mandate of N.C. G.S. 139,as amended,be followed and place the responsibility of the future of all Guilford County watersheds into the legal framework of the State of North Carolina.

Yours truly
Hal B. Lewis
Hal B. Lewis

Soil and Water Supervisor

encl;
cc: John C. White
Robert Cooper
Allen Wahab, N.C. Dept.
J. Clark Causey

AREAWIDE PROJECT REVIEW

Excerpts from the Demonstration Cities and Metropolitan Development Act of 1966
(P.L. 89–754, 80 Stat. 1261, 42 U.S.C. 3334)

Coordination of Federal Aid in Metropolitan Areas

SECTION 204. (a) All applications made after June 30, 1967, for Federal loans or grants to assist in carrying out open-space land projects or for the planning or construction of hospitals, airports, libraries, water supply and distribution facilities, sewerage facilities and waste treatment works, highways, transportation facilities, and water development and land conservation projects within any metropolitan area shall be submitted for review—

(1) to any areawide agency which is designated to perform metropolitan or regional planning for the area within which the assistance is to be used, and which is, to the greatest practicable extent, composed of or responsible to the elected officials of a unit of areawide government or of the units of general local government within whose jurisdiction such agency is authorized to engage in such planning, and

(2) if made by a special purpose unit of local government, to the unit or units of general local government with authority to operate in the area within which the project is to be located.

(b) (1) Except as provided in paragraph (2) of this subsection, each application shall be accompanied (A) by the comments and recommendations with respect to the project involved by the areawide agency and governing bodies of the units of general local government to which the application has been submitted for review, and (B) by a statement by the applicant that such comments and recommendations have been considered prior to formal submission of the application. Such comments shall include information concerning the extent to which the project is consistent with comprehensive planning developed or in the process of development for the metropolitan area or the unit of general local government, as the case may be, and the extent to which such project contributes to the fulfillment of such planning. The comments and recommendations and the statement referred to in this paragraph shall, except in the case referred to in paragraph (2) of this subsection, be reviewed by the agency of the Federal Government to which such application is submitted for the sole purpose of assisting it in determining whether the application is in accordance with the provisions of Federal law which govern the making of the loans or grants.

(2) An application for a Federal loan or grant need not be accompanied by the comments and recommendations and the statements referred to in paragraph (1) of this subsection if the applicant certifies that a plan or description of the project, meeting the requirements of such rules and regulations as may be prescribed under subsection (c), or such appli-

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DETERMINE WATER USAGE

APARTMENTS AND TRAILER PARKS

TABLE 3

Figures are based on 50 gallons per person per day, 3 people per unit, each unit containing a bathroom, kitchen sink, and laundry tub.

Number of units	5	10	15	20	30	40	50
Total water usage (except sprinkling)	750	1,500	2,250	3,000	4,500	6,000	7,500
Peak GPM with flush valves	50	68	80	90	109	128	145
Peak GPM with flush tanks	23	35	45	53	67	80	93
Toilets by-passed (gal/day) (Estimate 30 gal/person)	450	900	1,350	1,800	2,700	3,600	4,500
Toilets by-passed (flow GPM)	20	32	42	49	61	73	84
Hot water only (gal/day) (Estimate 20 gal/person)	300	600	900	1,200	1,800	2,400	3,000
Hot water only (flow GPM)	13	23	31	36	46	54	62

MOTELS

TABLE 4

Figures are based on 40 gallons per person per day, 2-1/2 people per unit, each unit containing a bathroom group. Estimate water usage for restaurant or cocktail bar facilities separately.

Number of units	10	20	30	40	50	75	100	125	150
Total water usage (gal/day)	1,000	2,000	3,000	4,000	5,000	7,500	10,000	12,500	15,000
Peak GPM with flush valves	68	90	109	128	146	180	210	240	270
Peak GPM with flush tanks	28	43	55	65	75	105	130	152	172
Toilets by-passed (gal/day) (Estimate 25 gal/person)	625	1,250	1,875	2,500	3,125	4,690	6,250	7,815	9,375
Toilets by-passed (flow GPM)	25	38	48	58	67	84	105	125	145
Hot water only (gal/day) (Estimate 16 gal/person)	400	800	1,200	1,600	2,000	3,000	4,000	5,000	6,000
How water only (flow GPM)	17	28	36	43	48	62	73	85	96

TABLE 5

Because of the wide variation in number and type of fixtures used for the following establishments, water usage figures only are given. To determine flow in GPM, see fixture unit, Table 1.

SCHOOLS	With cafeteria and showers estimate 25 gal/day per student (total water usage), or estimate 10 gal/day per student (hot only). With cafeteria, no [illegible] estimate 15 gal/day per student (total water usage), or estimate 4 gal/day per student (hot only).
RESTAURANTS	Estimate 10 gallons per person per day (total water usage), or estimate 4 gallons per person per day (hot only). Add 30% water usage for 24 hour restaurants, add 2 gal/person/day for cocktail bar facilities.
HOSPITALS	Estimate 250 gallons per day per bed (total water usage), or estimate 170 gallons per day per bed (hot only).
NURSING HOMES	Estimate 75 gallons per day per bed (total water usage), or estimate 50 gallons per day per bed (hot only).
DORMITORIES	Estimate 40 gallons per person per day (total water usage), or estimate 16 gallons per person per day (hot only).
OFFICE BUILDING	Estimate 15 gallons per person per day (total water usage), or estimate 2 gallons per person per day (hot only).
BOILERS	To determine daily make up in gallons: 1. Multiply boiler horsepower by 4.25 2. Then multiply (1) by hours per day operation. 3. Then multiply by the % operating rating. 4. Then subtract the % of condensate return.
COOLING TOWERS	To determine daily make up in gallons: 1. Multiply the tonnage by 4. (This includes 2 gal/hour/ton evaporation and 2 gal/hour/ton bleed off.) 2. Then multiply (1) by the hours per day operation.

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From USDPH adopted for National Plumbing Code.

GUILFORD COUNTY
SOIL & WATER CONSERVATION DISTRICT
POST OFFICE BOX 1768
GREENSBORO, NORTH CAROLINA 27402
TELEPHONE 378-5400

OUR SOIL ★ OUR ST

January 18,

Mr. Owen Braughler, Head
Division of Environmental Health
Guilford County Health Department
301 North Eugene Street
Greensboro, N. C.

Dear Mr. Braughler:

A major area of study planned for 1979 by the North Carolina Soil and Water Conservation District Research Committee, of which I am a member, is that of sewage and wastewater treatment and disposal methods used throughout the districts.

As disposal of wastes by means of septic tank systems is an integra part of this area of study, we need to have pertinent data containe in the field records of the required "percolation tests" conducted the Sanitarians.

We need this information to assess: (1) the extent to which septic tank disposal systems may be used in the district realted to types of soils; (2) the indicated degree of effectiveness of septic tank disposal systems previously approved and now in use; (3) the provi ions for approval of septic tank system installations when percol ion rates nearly meet the minimum standard rate (1 inch per 60 mi utes). The provisions are set by the inspecting Sanitarians who, under particular conditions, are permitted to allow modificatio in the disposal system structure.

On a separate page, attached, I have listed the specific items of information we wish to obtain. You may note that this is basic field data, i.e., the rates of percolation corresponding to the holes tested. Because of the work that may be involved in collecting this data, work which may overburden your present employees, I propose that I and/or an assistant undertake the task. I am famili with the percolation test procedures and required documents for the Sanitarians use and registration of approval.

I am sure that you recognize both the importance and urgency of the work to soil and water conservation planning in the district, and we seek your full cooperation. To aid my scheduling of time to obtain this information, may I have your response at the earliest opportunity?

Sincerely yours,

Hal B Lewis

Hal B. Lewis

cc: Dr. J. L. Holliday
Dr. Van Jenkins

GUILFORD COUNTY
SOIL & WATER CONSERVATION DISTRICT
POST OFFICE BOX 1768
GREENSBORO, NORTH CAROLINA 27402
TELEPHONE 378-5400

OUR SOIL ★ OUR STRENGTH

Page 2 : attachement to Hal Lewis letter of 1/18/79

Specific Information Requested from Sanitarians' Percolation Test Records For the period 1960 to present date

1. Locations of percolation test holes (from plat maps or other graphic means and/or by narrative descriptions)
2. Rates of percolation corresponding to each test hole
3. Types of soil in which percolation test holes were dug, if known
4. Dates upon which percolation tests were conducted, corresponding to each test (2 or 3 holes to establish one filter field)
5. The final evaluation of the suitability of each lot for the installation and use of a septic tank sewage disposal system together with Sanitarian's requirements to gain approval (discretionary determinations) where marginal percolation rates occurred.

GUILFORD COUNTY
SOIL & WATER CONSERVATION DISTRICT
POST OFFICE BOX 1788
GREENSBORO, NORTH CAROLINA 27402
TELEPHONE 378-5400

OUR SOIL ★ OUR STRENGTH

January 18, 1979

Mr. Larry Harvell
Division of Environmental Services
301 N. Eugene St. - Rm P-17
Greensboro, N. C. 27402

Dear Mr. Harvell:

In reviewing the City-County Water-Sewer Agreement I note that certain areas were agreed to be serviced, but the areas were not listed in my copy of the agreement.

As a member of the North Carolina Association of Soil and Water Conservation District research committee, doing research on 208 planning, I need this information, i.e. what specific areas are covered in the agreement of 26th May 1968?

Thank you for your cooperation.

Yours truly,

Hal B Lewis

Hal B. Lewis

145

OFFICE LOCATION: GUILFORD COUNTY AGRICULTURAL CENTER. 3309 BURLINGTON ROAD

GUILFORD COUNTY
SOIL & WATER CONSERVATION DISTRICT
POST OFFICE BOX 1788
GREENSBORO, NORTH CAROLINA 27402
TELEPHONE 378-5400

OUR SOIL ★ OUR STRENGTH

January 18, 1979

Dr. Van-Jenkins, County Soil Scientist
Soil Scientist Office
Guilford County Court House
Government Center
Greensboro, N. C.

Dear Dr. Jenkins:

The State Soil and Water Conservation District Research Committee, with whom you as a former S.C.S. employee may be familiar, has proposed to study sewage treatment and disposal methods in the various districts.

You, undoubtedly, recognize the significance of this kind of study of the use and possible use of septic tank disposal systems to the prudent use of limited soil and water resources within a district area.

To our knowledge, no systematic procedure has been undertaken to relate actual percolation tests conducted by County Sanitarians to types of soil found in the county. Guilford County, I understand, has a tremendous advantage over many other counties in that it has been entirely mapped and that at least one-half of the information to discover this relationship is available. Again, I'm sure you appreciate the practical significance of relating measured percolation to known soils--any defineable pattern indicating the capabilities of the various soil types to serve as safe filter fields would be a decided aid in soil and water convervation planning in the county.

It is very possible that you may have taken some initial steps in the direction of this kind of study. If so, we would be grateful to have the results of your work as well as any other information or advice you might offer to help direct our efforts.

Sincerely yours,

Hal B. Lewis

Hal B. Lewis

OFFICE LOCATION: GUILFORD COUNTY AGRICULTURAL CENTER, 3309 BURLINGTON ROAD

GUILFORD COUNTY
SOIL & WATER CONSERVATION DISTRICT
POST OFFICE BOX 1768
GREENSBORO, NORTH CAROLINA 27402
TELEPHONE 378-5400

OUR SOIL ★ OUR STRENGTH

January 18, 1979

Mr. Larry Harvell
Division of Environmental Services
301 N. Eugene St. - Room P17
Greensboro, N. C. 27402

Dear Mr. Harvell:

The North Carolina State Association of Soil and Water District Research Committee, of which I am a member, are doing research on 208 plans.

Please advise under which conditions:

1. Public Line Construction
2. Publich Health Neccessity
3. Privately Financed Construction

Were the following projects initiated:

1. Extending water and sewer to Reedy Fork
2. Extending water and sewer to Naval Reserve Center
3. Extending water and sewer to Airport Industrial Park
4. Extending sewer to Horsepen Creek Watershed.

Thank you for an early reply.

Yours truly,

Hal B. Lewis

Hal B. Lewis
Soil and Water Conservation District Supervisor

OFFICE LOCATION: GUILFORD COUNTY AGRICULTURAL CENTER, 3309 BURLINGTON ROAD

GUILFORD COUNTY
SOIL & WATER CONSERVATION DISTRICT
POST OFFICE BOX 1768
GREENSBORO, NORTH CAROLINA 27402
TELEPHONE 378-5400

OUR SOIL ★ OUR STRENGTH

January 4, 1979

Howard N. Lee, Secretary
North Carolina Dept. of Natural Resources
and Community Development
P.O. Box 27687
Raleigh, North Carolina 27611

Dear Secretary Lee:

As a newly-elected member of the Guilford Soil & Water Conservation District Board of Supervisors, I have been reviewing the September 1978 draft of the Environmental Impact Statement of the Horsepen Creek Interceptor Project, the proposed project to extend sewer lines into the water shed of Greensboro's water supply reservoirs. I have noted your letter of June 28, 1978 to Mr. John White, EPA Region IV Director entered as the final page of the draft.

Because the Soil and Water Conservation District Supervisors have been mandated to protect the watersheds within their respective districts, I surmise that an amiable, cooperative relationship must be established between the Boards of Supervisors and your department to enable the Supervisors to fulfill their responsibilities successfully.

Consequently, to aid my understanding of your position concerning the sewering of the Horsepen Creek/Greensboro reservoir watershed in the Guilford County Soil and Water Conservation District, I need more detailed information than given in your June 28 letter. I refer particularly to the objection you have expressed to the alternative selected by the EPA, described in the draft, and am much interested in the specific reasons supporting your objection.

Presently, based upon the information in the draft EIS, I am convinced that the EPA alternative (and safeguards suggested in the "Mitigating Measures" section) are compatible with a sound soil and water conservation program as well as more nearly fulfilling the intent of the National Environmental Policy Act; that federal money be granted only to those projects which, principally, will alleviate existing conditions presently threatening the health of the established inhabitants of a given area, and not promote projects which contrarily, pose threats to human health and safety. I am especially interested in knowing your thoughts related to this aspect of the proposed sewering project and, respectfully, await your earliest reply.

Sincerely yours,

Hal B. Lewis

Hal B. Lewis

OFFICE LOCATION: GUILFORD COUNTY AGRICULTURAL CENTER, 3309 BURLINGTON ROAD

GUILFORD COUNTY
SOIL & WATER CONSERVATION DISTRICT
POST OFFICE BOX 1708
GREENSBORO, NORTH CAROLINA 27402
TELEPHONE 378-5400

OUR SOIL ★ OUR STRENGTH

January 4, 1979

Mr. Robert Cooper
Environmenntal Protection Agency - Region IV
345 Courtland St.
Atlanta, Ga. 30308

Dear Mr. Cooper:

As a newly elected member of the Guilford District Board of Soil and Water Supervisors, (taking office Dec. 4, 1978). I have been reviewing the EIS Horsepen Creek Interceptor, serving a watershed supplying drinking water to Greensboro, North Carolina.

I was astonished to learn, according to our telephone conversation, that no input had been received from the Guilford District Board of Soil and Water Conservation Supervisors.

As per your request for public information pertaining to this watershed I am enclosing:

1. A copy of North Carolina General Statute 139.
2. Long Range Program for Guilford County Soil and Water Conservation District.
3. Annual Plan of the Guilford County Soil and Water Conservation District 1978-79 fiscal year.
4. Program objectives 1978-79 North Carolina Association of Soil and Water Conservation Districts.

We concur in all the program and objectives as expressed, or outlined in this literature and General Statute.

A separate letter will follow, from the writer, commenting on the EIS, due to the time limitations we are forwarding the enclosed for your immediate use.

Yours truly,

Hal B. Lewis

Hal B. Lewis

cc: Allen Wahab
John C. White

December 4, 1978

Mr. Bob Cooper
Environmental Protection Agency
345 Courtland Avenue
Atlanta, Georgia 30308

Dear Mr. Cooper:

Enclosed is the response of the Guilford County Advisory Board for Environmental Quality to the Environmental Impact Statement for the Horsepen Creek Interceptor Sewer Project. The statement was presented at the Environmental Protection Agency's public hearing in Greensboro on November 20, 1978.

For the past several years, one of the Advisory Board's most important and ever-increasing concerns has been water quality and its relationship to urbanization. This pervasive concern over water quality was the motivation behind our current restudy of the issue of the sewer line.

The Guilford County Advisory Board feels that Alternative 5, the no growth alternative, offers the best long-term protection of water quality, and we encourage that Alternative 5 be substituted for Alternative 2-E as recommended in the Environmental Impact Statement.

Sincerely,

Paul E. Lutz

Paul E. Lutz
Advisory Board for Environmental Quality

PEL:nh

cc: Mr. Mark Oakman
    Mr. Lee Wilson

November 20, 1978

THE RESPONSE OF THE
GUILFORD COUNTY ADVISORY BOARD FOR
ENVIRONMENTAL QUALITY
TO THE
ENVIRONMENTAL IMPACT STATEMENT FOR
THE HORSEPEN CREEK INTERCEPTOR PROJECT

Ever since its inception in 1972, the Guilford County Advisory Board for Environmental Quality has considered that the problems associated with water are the most serious and urgent environmental issues facing Guilford County now and in the future. Our Board has ranked as a priority concern both water quality and quantity, and this deep concern has been manifested in many different forms in the past 6 years. Since the Horsepen Creek Interceptor Project directly impinges on water quality, our Board has taken an unusual amount of interest in this project and its EIS; Board members have brought considerable professional insights to bear on the many parameters of the entire project.

The Advisory Board is unswerving in its diligent pursuit of maintaining and even enhancing water quality for all our citizens. This Board has never been against growth or development so long as those factors did not significantly contribute to environmental degradation. But we are resolved in our conviction that water quality degradation is directly proportional to urban and suburban densities in the watershed. We believe that spreading urbanization adds numerous exotic (rare, unusual) chemicals and compounds to water supplies in very subtle amounts. Further, we are convinced of the real possibilities of very severe human conditions that will result from the protracted domestic use of water which is impounded immediately downstream from large suburban areas. There is a growing body of scientific studies to support and validate these concerns. The specter of carcinogenic, pathogenic, teratogenic, and mutagenic effects induced by deteriorating water supplies is a bleak, grim prospect for the future. We believe that population densities in the watershed must be kept low in order to preserve an acceptable degree of water quality.

The Horsepen Creek project is a classic example of the potentiality of completely degrading a municipal water supply by developing suburban areas in the watershed. The installation of a sewer interceptor line in the basin will certainly foster more intense development. More people will bring increased amounts of a variety of exotic chemical compounds and metals that already threaten to destroy irreversibly water quality in all the lakes downstream. Therefore the Guilford County Advisory Board for Environmental Quality feels that Alternative 5, the no action alternative, offers the best long-term protection of water quality, and we encourage that Alternative 5 be substituted for Alternative 2-E as recommended in the EIS.

The Advisory Board has, over the past 20 months, consistently advocated to the Board of County Commissioners that population densities must be kept comparatively low in this fragile watershed. We have strongly urged the Commissioners to support measures which will minimize growth in the basin and which will retard runoff into the impoundment. We will continue to advocate for mitigating conditions which will reduce the chances for the water supply to be damaged further. But the influence of the Advisory Board to institute protective measures is limited, and we need any additional help to regulate density in this watershed; Alternative 5 will do precisely that.

SIERRA CLUB Joseph LeConte Chapter

. . . To explore, enjoy and preserve the nation's forests, waters, wildlife and wilderness . . .

Horsepen Creek Interceptor, Greensboro, N. C.

Statement of Piedmont Plateau Group - Sierra Club

November 20, 1978

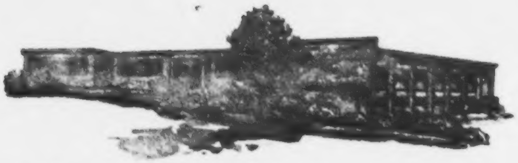
Given by Pat Lutz, Chairperson

The Sierra Club has been on record as opposing this interceptor line through the Horsepen Creek basin since it's initial proposal. After the EIS was published, we felt that our concerns and objections were confirmed. In fact, the water quality is rapidly deteriorating with the amount of development presently found in the basin. The effects of septic tanks, once thought to be the principal source of pollution in the basin, have been shown to be minimal. Surprisingly, the principal sources of pollution have been due to the urbanization process itself. Lake Brandt is a precariously balanced eco-system at this time with very little ability to absorb additional pollutants. Any change in the present land use patterns will destroy this balance - bringing on eutrophication of the lake and thereby making it unusable as a drinking water source. The pollutants in this case are the nitrogen and phosphorus levels. The concentrations of these chemicals will be increased as the basin becomes urbanized. Eutrophication is being held in check now by sedimentation from agricultural lands, and while sedimentation itself is undesirable, without it Lake Brandt would be "dead" today.

The EIS also found that the concentrations of lead in Lake Brandt exceeded the federal safety regulations for public drinking water supplies. These lead concentrations are a direct result of urbanization and the transportation systems that must accompany it. Lead is a cumulative poison, and long-term exposure, even to moderate concentrations, can cause chronic illnesses and perhaps death. The concentrations in our water supply are already dangerous and further urbanization will bring more of these exotic chemicals into the water supply. To ignore this concept, which is so clearly stated in the EIS, is almost criminal, and the effects will be felt by citizens for years to come.

We have highlighted only a few of the problems that concern us about this proposal, but we feel that these illustrate our position. The lasting effects of a mistake at this juncture in time make this proposal something more than a mere sewer interceptor line, and for that reason we recommend that Alternative #5 or 6 be accepted. We would also urge the EPA to accept the data reflected in the EIS in their decision-making process. This data, gathered by an unbiased study group with no contractural agreements in Guilford County, would seem to be the most credible. Our water supply problems are already legendary; we must not destroy what we have. The Sierra Club has operated for many years with a motto that is very appropriate for this issue - "Not blind opposition to progress, but opposition to blind progress."

Ms. Pat Lutz
5408 Ainsworth Drive
Greensboro, N. C. 27410



DR. DOUGLAS P. MAGANN III, SUPERINTENDENT

GUILFORD COUNTY SCHOOL SYSTEM
120 FRANKLIN BOULEVARD
P.O. DRAWER B-2
GREENSBORO, NC 27402
272-0191 882-1822

December 4, 1978

Mr. John E. Hagan, III
Chief, EIS Branch
Environmental Protection Agency
345 Courtland Street, N. E.
Atlanta, Georgia 30308

Dear Mr. Hagan:

I am writing to you with regard to ongoing deliberations about the proposed Horsepen Creek Interceptor Sewer in the Northwest section of Guilford County. Although public schools must serve the public wherever that public resides, certain long range decisions were made prior to my arrival in Guilford County and I think you should be aware of them before you reach a final decision.

Several school complexes were constructed in the western and northwestern areas during the late 1960's and early 1970's to accomodate projected residential populations. The site locations were chosen on the basis of these projections and millions of tax dollars were expended. At the time the decisions were made, the planners used the best information available. I doubt that anyone anticipated the questions involved in the present debate.

Two school complexes "bracket" the Horsepen Creek area and were intented to serve a substantial population projected for that area. I am concerned that, if development is severely restricted as a result of inadequate wastewater removal facilities, radical rezoning will become necessary and pupil transportation costs over time will be astronomical. These two negative results will be necessary to make efficient use of existing facilities.

I am an advocate of rational land use and consider myself an environmentalist. I do not wish to support a decision that will have catastrophic environmental results. Based on my understanding of the effects of the proposed sewer lines, I cannot but conclude that rational use of the land area would be fostered by adequate lines.

EDUCATIONAL EXCELLENCE

Thank you for the opportunity to share this information with you. If I can be of future assistance to you, please do not hesitate to contact me.

Sincerely,

D.P. Magann

D. P. Magann

cc: Allen Johnston
W. B. McLeod
J. R. Sinclair
I. H. Black
C. Howard Cross
T. G. Madison

Statement of
Charles E. Melvin, Jr., President
Greensboro Chamber of Commerce
Presented
Monday, November 20, 1978
At An
EPA Public Hearing
On the Draft Environmental Impact Statement
for Wastewater Facilities in the Horsepen Creek Basin

I am Charles Melvin, President of the Greensboro Chamber of Commerce. The Chamber is a voluntary association of over 1800 civic and business leaders concerned with the appropriate growth and development of the Greensboro area.

We welcome EPA representatives to our community this evening. The Chamber appreciates your efforts to insure protection of the environment and achieve wise use of federal financial resources.

We understand the purpose of tonight's hearing is for EPA to receive comments on the Draft Environmental Impact Statement for the Horsepen Creek basin. We understand that there are questions of fact yet to be resolved between EPA and the County. These questions of fact relate primarily to existing and anticipated sewage flow and engineering factors related to design of the collection system. We urge EPA to meet with the County to resolve such questions.

The Chamber has worked through the years in a cooperative relationship with Guilford County and the City of Greensboro. We believe our community has benefited from a close working relationship among local, state and federal governments. The Chamber urges that EPA work closely with the County to achieve a wastewater collection system adequate and appropriate for the level of development forecasted to occur.

The Chamber is concerned about wastewater facilities in the Horsepen Creek basin for several reasons. First, it is the community's major growth center with significant residential development. Second, as the center for industrial growth, it is an area which affords residents of our community excellent employment opportunities. Third, it is a watershed for our community's water supply. We are vitally interested in the protection of that supply. Fourth, because of the extensive urban development which has occurred on septic tanks, we are anxious to see the completion of public wastewater collection facilities.

The Chamber urges construction of an interceptor sewer adequate to serve the ultimate development of the basin.

If EPA does not concur in the Chamber's position, we believe the public interest demands that a system consistent with optimum community development and a meaningful cost-benefit evaluation be constructed. The Chamber wants to eliminate additional delays. Accordingly, the Chamber will support an interceptor sewer judged by the County, based upon sound engineering studies, to be appropriate for existing and future development of the Horsepen Creek basin.

Thank you.

Mr. Hawley

STATEMENT BY MAYOR JIM MELVIN
ON HORSEPEN CREEK INTERCEPTOR
ENVIRONMENTAL IMPACT HEARING

November 20, 1978

Mr. Holland

Ladies & Gentlemen,

Hopefully this is the last hearing that will be necessary in order to make pollution abatement in Guilford County a reality. We have finally decided on a site for the Metro Plant. We have decided that an outfall in Horsepen Creek is desirable and has less adverse environmental impact than for the area to develop on septic tanks. What we will be discussing tonight should be a function of the Step II Design Phase of this project and not of the Step I Planning Phase.

We have carefully studied the draft Environmental Impact Statement. We are in agreement with many of the conclusions which have been known for years.

The City of Greensboro has worked closely with Guilford County since 1965 to provide an orderly development of a water supply and sanitary sewer system for those in our community who happen to live or work outside the corporate limits of the City. The agreement in existence has been a model for others to use. It has been successful. The intergovernmental relationship between Guilford County and Greensboro has been contributory in making the quality of life in this community so good that a recent study by the University of Nebraska has ranked us as the 5th best community in the nation in which to live.

As previously pointed out by Chairman Campbell, regulation of development has been controlled by zoning. Subdivision ordinances and erosion and sedimentation control ordinances are in effect. Stormwater Management will be a reality shortly. The County and City now are planning for long-range water supply projects in conjunction with State and Federal Governments. I cite these to show what local government is doing to enhance the environment in which we live in and to refute the statement in the draft EIS that a lack of desire to mitigate secondary impacts exists within local government. We have the tools and the will. And I might add here that the draft EIS does recognize that mitigative measures to protect the quality of water in Lake Brandt are already in use or proposed. More importantly, we have the support of the people. A survey completed this month indicates that over 70% of the people feel that the quality of life in our community has improved since they have lived here. The survey also indicated that they are vitally interested in Environmental matters. That same study gave showed that nearly 85% of those surveyed gave high marks to local government regarding regulation, services and taxes. So we must be doing a few things right.

It is fashionable to blast EPA at every opportunity, but we are going to forego that opportunity tonight. It is our sincere feeling that EPA got some bad advice from their consultants.* But then everyone errors occasionally and all that we ask is that EPA not take a concrete position on specific pipe size but rather let the engineers design the system based upon existing condition being consistent with the agreed upon population to be served in the year 2000.

* as late as this afternoon Radian admitted to not knowing many very important facts.

If this is done we are confident that the interests of all can be served to the fullest extent.

I ~~We~~ would close by emphasizing three major points.

1. The engineering relating to pipe sizes is lousy. When pipes 20 feet deep supposedly cost the same to install as an equivalent size pipe 6 feet deep and then do not even then conform to required state standards, then lousy is as kind as I can be. I suspect that the main problem was that they did not know which way the sewage flowed.

2. Controls to deal with growth in the basin and protect the quality of the water in Lake Brandt are in place and are acknowledged in the draft EIS.

3. The question of 208 Planning is of no concern in this question. Where an area is not designated as a 208 area the responsibility becomes one of the State, in this case North Carolina. The plan which the County has set forth for handling the wastewater in Horsepen Creek is not an unreasonable one. It is acceptable to the State and the City of Greensboro wholeheartedly supports it. Thank you.

Mr. John E. Hagan III
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, NE
Atlanta, GA 30308

RE: Draft of EPA Environmental Impact Statement, Greensboro-Guilford County North Carolina Horsepen Creek Interceptor, EPA Project No. C37036901
(Please include these comments as part of the record of the public hearing held on November 20, 1978 in Greensboro)

DRAFT REVIEWED BY: James R. Rees, Soil Scientist
Physical Environments Analysts, Inc.
1905 Marion Street, Greensboro, N.C. 27403
Date: 10 October 1978

The following comments and/or questions are made as a response to the above Draft E.I.S. and to facilitate presentation and reading, are divided into "sections," appropriately captioned.

I. Assumptions of Future Population Density and Development of the Horsepen Creek Basin

Because the "projected" settlement of the basin appears to be a prime consideration upon which most of the other considerations of the E.I.S. are founded, this aspect of the environmental impact investigation and subsequent draft report calls for an intensive analysis.

All scientists are well aware that although the use of "assumptions" (of fact, unles otherwise identified) facilitates interpretive work and evaluations (of whatever phenomena is being reported), the bases for the assumptions are open---and should be-for critical review and questioning.

In the quest for the factual bases for assumptions, scientists understand that the da of preceding reports from various other sources may or may not be reliable and/or per inent evidence to substantiate assumptions made in following reports. This prior information, itself, is subject to verification either by intensive examination to "estimate" its reliability, or better, by basic research to corroborate the earlier findings and conclusions reported. This is nothing more, of course, than a description of an important part of objective, scientific enquiry.

In this verification process, re-examination of the *existing physical materials and forces* of the environment causes little difficulty in terms of ascertaining the reliability of the data of other earlier reports. Existing physical materials and forces can be observed and measured and reasonable disparities between two or more separate investigations (due to normal change) can be accepted. However, projections to predict future conditions, *even of physical conditions*, by means of trends, patterns, analogs produce, at best, tenuous evidence to support assumptions. This uncertainty is radically compounded when persons attempt to foresee what wilful human individuals, responding to fluctuating economic pressures and personal desires, will do, i.e., where populations will move and establish themselves.

When demographic statistics are derived to project settlement in defined areas (using past established statistics to ascertain trends), official decisionmakers (and others) are prone, erroneously, to accept the conclusions as fact. Once the "fact" is assumed, it is used by planners (and others) as a point of argument for the need to provide shelters for the "increased" numbers of persons, *ipso facto*, in the defined area. This approach relegates the natural suitability of the defined area for habitations to a secondary place in importance. It is, essentially, a concession to the established practices of environmental resource use--- practices that are getting entire populations into trouble, ecological and economic trouble. The motivating view behind the established practices of use is that natural forces can be overridden by man at his will; that alleviation (correction) of certain adverse reactions to incompatible use can be treated consequently as a secondary matter. To state it succinctly, the use of demographic projections encourages the impulse to place undue emphasis upon housing numbers of persons, who may or may not be present at a future time, in natural areas physically unsuited for this type of land use.

If the intent of the National Environmental Policy Act is commendable and importance is attached to settling humans in environments that can accomodate the facilities of housing developments without radical disruptions (environments that are safe, healthful, pleasing and where costs of establishment, maintenance, and repair are minimal), the necessity for using dubious population projections as a basis for developing specific areas has not been proven. A rearrangement in the priorities of investigation of areas proposed for development would preclude the use of initial demographic predictions. This converse approach appears to be definitely more realistic, scientifically sound, economically prudent, and ecologically safe, i.e., carefully inventory and analyze the physical characteristics (including biological entities) of specific areas first and foremost. From these findings, consequently, determine the number of shelters (density of habitation) the location can "bear" safely, healthfully, at minimum private and public costs. In essence, this permits the physical qualities of a given land area to regulate in-migration and reduces the stress upon planners (and EPA personnel) to fit, by expensive means, the shelters needed to accomodate a predicted number of people into an area that may be largely inhospitable to this use.

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Specific Criticism

The format, data, and language of the draft EIS all demonstrate that the authors have been overly-preoccupied with using demographic projections as fact. Numerous "assumptions," implied as well as stated explicitly, proposed to undergird following assertions throughout the text, reveal this clearly. Section 3.2.5.1, Demography and Economics contains an outright statement of the fact, as follows:

> "An underlying assumption in developing the alternatives has been that 18,700 people will live in the Horsepen Creek basin in 2000. This represents a growth of 10,620 from the 1975 population of 8,080. This growth projection is a constant in this analysis, regardless of the alternat

References are made directly or by implication to this projected population statistic or "growth" figure on 10 other pages in the report: pages 22, 24, 30, 35, 37, 38, 39, 45, 101, 102. In all of this, unfortunately, no explanation was included to assess the validity and reliability of this statistic, how it was derived, from what source did the statistic come, what extrinsic influence (for instance, energy shortages) could act between 1978 and year 2000 to radically alter the apparently "hard-and-fast" statistical conclusion.

Inasmuch as the bases for the assumptions relied upon in the EIS investigation and as reported was not sufficiently explained, a full perspective of the environmental impact of the proposed sewering project was not offered. Perhaps of equal importance is that uncertain statistical evidence is given credence by its use by "authority," the Environmental Protection Agency, to set the precedence in planning for other public projects affecting the environment. To the extent that the effort to ascertain the physical characteristics and capabilities of the land is weakened by the distraction of unsure population predictions as the prime consideration for development, we will continue to suffer undesirable environmental and economic repercussions.

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II. Effects of Roadways Upon Flow and Pollution of Horsepen Creek

Section 5.1.5.2.2, Effects on Horsepen Creek Flow includes the following statement:

> "The STORM model (PA-R-667) results predict an increase in road mileage in the basin from the present 55 miles to 128 miles with sanitary sewer development or 155 miles with septic tank development."

The significance of the comparitive statistics of road mileage (between sewered development and development on septic tank systems) relative to Creek flow has not been explained. An inference can be drawn (without this explanation) that lineal miles of roadway may affect flow characteristics more than areal dimensions (miles x width). It seems reasonable to expect that heavier traffic attends developments of higher density (sewered development). Consequently, it seems likely that such development would require wider roads (guttered roads with storm sewers even). Thus, there would be a greater total area of impervious surfaces through sewered developments to adversely affect stream flows (and water quality) than through developments on septic systems. (This assumes that roadways through both kinds of development would be paved).

III. Costs of Public Services

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On page 102 in Section 5.2.1, Land Use, the following statement appears:

> "The land use pattern which should result in the Horsepen Creek basin will be costly to accomodate from a public services perspective. It costs more to provide essential public services (transportation, utilities, schools, etc.) for a low density pattern than it does for a high density pattern (RF-118)."

This conclusion, possibly, was drawn from studies of "established" developments of the same number of inhabitants, the difference being the spacing of the living quarters. If, however, there were more people living within the same areal dimensions (a high density development), it is not reasonable to expect that they would require less public service than fewer people in that same sized area (low density development). It is reasonable to expect that there would be more school-age children in the densely populated area, greater loads of trash and garbage generated, more civil disturbances, traffic accidents and emergencies all requiring corresponding tax-paid services of larger proportions than where population density was less. Due to the controls imposed by the Guilford Health Department (approximately 1 acre lot size per residence and septic tank system standards) development using the domestic system (the low density development) will probably proceed more slowly than where city sewer lines were accessible (promoting higher densities). This stretch-out time would also have some decided affects on the comparitive costs of servicing.

IV. Militating Measures - Construction of the Greensboro Thorofare Plan Facilities

Multilane roadways, bridges, and interchanges proposed in the Greensboro Thorofare Plan (short name) transect and disturb much of the Horsepen Creek Drainage Basin (the Greensboro City Reservoir System Watershed). Although citizens fully expect that the highway planners will observe the N.E.P. Act and develop a complete EIS for the entire project and submit it to the Environmental Protection Agency, this construction is an inextricable part of the development within the Basin. Commendably, Chapter 6, Mitigating Measures cited a long list of legal instruments now existing or being considered by officials that could be used to protect the watershed and city water quality. EIS authors failed to mention, however, the planned roadway of the Greensboro Thorofare Plan, in Chapter 6, and what measures might be taken to protect the city water from the pollution of pavement wash, the air from combustion products, the general serenity from noise pollution, the wildlife habitat from destruction, all adverse conditions resulting from the construction and subsequent long-time use of this enormously disruptive project.

James R Rees
James R. Rees

1905 Marion Street
Greensboro, N.C.

James R Rees

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RESEARCH ASSOCIATES
3116 SUMMIT AVENUE
GREENSBORO, N. C. 27405

Dec. 5, 1978

Mr. John E. Hagan III
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, NE
Atlanta, GA 30308

Dear Mr. Hagan:

As a member of Audubon Society, we are interested in conserving all national resources, including money. Therefore, I favor Alternative 2E, as the most cost effective alternative, including a force main of 8" and gravity flow line of 12" for gravity flow to NBC.

Radian Corp. is to be commended for its excellent evaluation in this study. The Alternative 2E appears liberal enough to meet future needs without being too conservative. The following estimates may be noted to achieve same results.

1. Population Increase.

   Present population is estimated at 8000 persons. Estimated annual population growth rate for Greensboro is about .7% and assuming 2.1% increase, or 3 times as much growth rate, this would mean a population of about 13,000 persons in 20 years, indicating Radian estimate of 18,000 is very liberal.

2. Sewage Flows.

   Future flows by Radian at 1.3 MGD is based on 70 gpdc, but using a more liberal estimate of 90 gpdc for estimated population and industrial growth rate above this would mean about 1.2 MGD flow, or about same as Radian projection. Depending on slope, outfall line may be raised to 15".

The very commendable presentation of research data by Radian demonstrates its expertise in environmental engineering and scientific studies and its findings should be given highest priority.

Yours very sincerely,

R H Souther

R. H. Souther

167

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
REGION IV
101 MARIETTA TOWER Suite 1053
ATLANTA, GEORGIA 30323

November 27, 1978

OFFICE OF THE
Principal Regional Official

HEW-887-10-78

Mr. John E. Hagan, III
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, N. E.
Atlanta, Georgia 30308

Subject: Greensboro - Guilford County, North Carolina
Horsepen Creek Interceptor
EPA Project No. C37036901

Dear Mr. Hagan:

We have reviewed the subject draft Environmental Impact Statement. Based upon the data contained in the draft, it is our opinion that the proposed action will have only a minor impact upon the human environment within the scope of this Department's review. The impact statement has been adequately addressed for our comments.

Sincerely yours,

James E Yarbrough

James E. Yarbrough
Regional Environmental Officer

cc: A. McGee
R. Goldberg

North Carolina
Department of Administration
116 West Jones Street Raleigh 27603

James B. Hunt, Jr., Governor
Joseph W. Grimsley, Secretary

Division of State Budget and Management
John A. Williams, Jr., State Budget Officer
(919) 733-7061

January 31, 1979

Mr. John E. Hagan III
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, NE
Atlanta, GA. 30308

Re: SCH File #135-78; Draft EIS - Greensboro-Guilford County, North Carolina; Horsepen Creek Interceptor

Dear Mr. Hagan:

The State Clearinghouse has received and reviewed the above referenced project. As a result of this review, the State Clearinghouse has received from Division of Policy Development the attached memorandum.

Thank you for the opportunity to review the referenced draft environmental impact statement.

If you have questions regarding these comments please contact Ms. Jane Sharp at 733-4131.

Sincerely,

Chrys Baggett

Chrys Baggett (Mrs.)
Clearinghouse Director

CB:mw

cc: Region "G"

Attachment

North Carolina
Department of Administration
116 West Jones Street Raleigh 27603

James B. Hunt, Jr., Governor
Joseph W. Grimsley, Secretary

Arnold Zogry
Assistant Secretary for Policy and Management
(919) 733-4131

M E M O R A N D U M

TO: Clearinghouse

FROM: Anne Taylor Anne Taylor

DATE: December 7, 1978

RE: EPA Project No. C 370 369 01
Horsepen Creek

I agree with the Secretary of Natural Resources and Community Development that a comprehensive plan for growth management (the 208 plan) in the Horsepen Creek Basin west of Greensboro is vital to the success of the Horsepen Creek Interceptor, EPA Project No. C 370 369 01.

We believe that the mitigating measures outlined in pages 105-110 need to be in place before the line is constructed, since population and development pressures will quickly provide the major adverse impacts on water quality associated with urbanization in the Horsepen Creek area noted in the EIS (pages 89-103).

It is suggested that implementation of the recommended mitigating measures begin with acquisition of lands for recreation and conservation and a regular water monitoring program for Horsepen Creek and Lake Brandt, and that they include all of those listed on pages XVIII and XIX, as well as the above pages (105-110).

AT/mf

DEPARTMENT OF DEFENSE

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402

IN REPLY REFER TO
SAWEN-E

1 December 1978

Mr. John E. Hagan III
Chief, EIS Branch
Environmental Protection Agency, Region 4
345 Courtland Street, N.E.
Atlanta, GA 30308

DEC 4 '78

Dear Mr. Hagan:

I have reviewed the draft Environmental Impact Statement for the Horsepen Creek Interceptor, Greensboro-Guilford County, North Carolina, EPA Project No. C37036901 and have no comments to make on the contents of that document.

The Wilmington District, Corps of Engineers, is also preparing to initiate studies of the Greensboro area. In July 1977, Congress, in response to a request from local government officials acting through their Congressman, authorized the Chief of Engineers to conduct a water resources investigation of Guilford County, N.C., under the Corps of Engineers urban study program. This study will address the full range of water resource problems and needs, including flood damage prevention, water supply, water based recreation, and wastewater management. The wastewater management portion of the study will be conducted in full accordance with the Environmental Protection Agency's 208 Planning Guidelines and will be coordinated fully with your agency. This study is currently scheduled to be initiated in Fiscal Year 1980 depending upon Congressional appropriation of study funds and should be completed after a three-year study period.

If you have any questions regarding the more exact nature of our studies, or if I can be of assistance to you in your studies, please feel free to contact me. I appreciate this opportunity to review the Environmental Statement, and I am looking forward to working closely with you on the Corps' urban study.

Sincerely yours,

Adolph A. Hight

ADOLPH A. HIGHT
Colonel, Corps of Engineers
District Engineer

United States Department of the Interior

OFFICE OF THE SECRETARY
[redacted]
Southeast Region 148 International Blvd., N.E. Atlanta, GA 30303

ER-78/1052

Mr. John E. Hagan III
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Mr. Hagan:

We have reviewed the draft environmental statement for the Horsepen Creek Interceptor, Guilford County, North Carolina, as requested in Mr. White's notice of October 5.

General Comments

The Department of the Interior's previous comments on Environmental Protection Agency environmental statements have expressed concern with the lack of information on cultural resources. We note a similar deficiency in this statement in that the identification of cultural resources has been relegated to later stages of the proposed project. This procedure fails to provide adequate consideration of cultural resources in the early planning stages, a requirement of EPA's own guidance in 40 CFR Part 6. The assertion on page 38 that there is no indication of the existence of historical or archeological resources in the affected area is unsupported. The statement shows no indication that the considerations required by the National Historic Preservation Act and Executive Order 11593 entered into the early planning for the project. We feel that, as a minimum, the environmental statement should include specific comments and recommendations made by the State Historic Preservation Officer and/or the State Archeologist as to the probability of encountering cultural resources or the need for a professional survey.

Specific Comments

Page 6, Paragraph 2

Facilities for the proposed action are designed to transfer as much as 2.4 million gallons per day of combined domestic and industrial wastewater to the North and South Buffalo Creek basins for treatment. The relation of the increased flows to the treatment capacity of the Buffalo Creek plant and the effects of increased flow of treated effluent on receiving streams should be discussed.

We appreciate the opportunity to comment.

Sincerely yours,

James H. Lee

James H. Lee
Regional Environmental Officer

APPENDIX B

TRANSCRIPT OF THE DRAFT EIS PUBLIC HEARING

BEFORE THE ENVIRONMENTAL PROTECTION AGENCY

- - - - - - - - - - - - - - - - - x

GREENSBORO-GUILFORD COUNTY, :
NORTH CAROLINA :
EPA NO. C37036901
HORSEPEN CREEK INTERCEPTOR :

- - - - - - - - - - - - - - - - - x

Coliseum Auditorium
Greensboro, North Carolina

Monday, November 20, 1978

The above-entitled matter came on for public hearing pursuant to notice at 7:00 p.m.

BEFORE:

SANFORD W. HARVEY, JR.
Co-Chairman
Regional Counsel, Region IV
Environmental Protection Agency
Atlanta, Georgia

A. F. McRORIE
Director
Division of Environmental Management
North Carolina Department of Natural Resources

Members of Panel:

JIM FINGER, Director; Surveillance and Analysis Division; Environmental Protection Agency

JOHN HAGAN, Chief; EIS Branch; Environmental Protection Agency; Atlanta, Georgia

HAROLD DUHART, Chief; North Carolina Section of the Water Division; Environmental Protection Agency

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PROCEEDINGS 7:10 p.m.

CHAIRMAN HARVEY: Good evening. May I call the meeting to order, please?

Welcome to this public hearing on the Draft Environmental Impact Statement for the Horsepen Creek portion of the Greensboro-Guilford County Wastewater Treatment System.

I would like to begin by introducing the hearing panel. I am Sanford Harvey, Regional Counsel, Co-Chairman from EPA Region IV in Atlanta. The other Co-Chairman for this panel and to my immediate left is Mr. Mac McRorie, Director of the Division on Environmental Management from the North Carolina Department of Natural Resources.

To his left is Mr. Jim Finger, Director of the Surveillance and Analysis Division of EPA. To my immediate right is Mr. John Hagan, Chief of the EIS Branch of EPA, Atlanta, and to his right, Mr. Harold Duhart, Chief of the North Carolina Section of the Water Division, also of EPA.

People I would like to introduce who are not a part of this hearing panel but are here to either participate or to observe these proceedings are as follows: Mr. Jim Melvin, Mayor of the City of

Greensboro; Mr. Forest Campbell, Chairman, Board of County Commissioners, Guilford County. I would also like to recognize Commissioner Deal present and representing the City Council for the City of Greensboro; Councilpersons Bowie, McManus, Forbes and Jimmy Barber.

I also would like to recognize the Mayor Pro-Tem, Mr. Neusbaum of the City of Greensboro.

Our particular thanks this evening are also extended to Mr. Ray Shaw, Assistant Director of Public Works for the City of Greensboro, and to Mr. Larry Harvell, Director of Environmental Services of Guilford County, for providing these arrangements this evening.

Are there any other elected officials that I have overlooked? If so, if you would like to stand and state your name, I will recognize you at this time.

(No response.)

CHAIRMAN HARVEY: Very well.

The National Environmental Policy Act of 1969, requires an agency of the Federal Government to prepare an environmental impact statement whenever that agency proposes to take a Federal action significantly affecting the quality of the human environment. In addition, the North Carolina Environmental Policy Act of 1971, requires an agency of the State Government to prepare an environmental impact statement whenever that agency proposes to take a state action significantly affecting the quality of the human environment.

Guilford County, North Carolina applied for a grant from the United States Environmental Protection Agency and the North Carolina Department of Natural Resources and Community Development to develop a wastewater treatment system to service the Horsepen Creek area.

The Environmental Protection Agency and the state, responding to the mandate of their respective Environmental Policy Acts, determined that the issuance of funds for the proposed wastewater treatment facilities was a major Federal and state action significantly affecting the quality of the environment.

Accordingly, on April 5th, 1976, the Environmental Protection Agency and North Carolina Department of Natural Resources and Community Development issued a Notice of Intent to prepare a joint Environmental Impact Statement.

On November 10th, 1976, the Governmental agencies jointly held a public meeting to discuss the objectives of the Environmental Impact Statement and the public involvement program.

Pursuant to the guidelines of the Council on Environmental Quality and the rules and regulations of the Environmental Protection Agency and the North Carolina Department of Natural Resources and Community Development, with regard to the preparation of Environmental Impact Statements, this public hearing is being held to receive comments from the public on the Draft Environmental Impact Statement.

This Draft is being discussed in a public forum to encourage full participation of the public in the decision making process and to develop improved public understanding of projects funded with Federal and state funds.

A report of these proceedings will be made and become a part of the record. Notice of the public hearing was published in the Greensboro Daily News on October 22nd and November 19th, 1978.

The Draft Environmental Impact Statement was submitted to the Environmental Protection Office of Federal Activities and made available to the public on October 13th, 1978.

Before we begin citizen testimony, Mr. Bob Cooper of the Environmental Impact Statement Preparation Section will give us a brief summary of the project.

MR. COOPER: Thank you, Sanford.

This Draft Environmental Impact Statement addresses the provision of wastewater transmission treatment and disposal facilities for the Horsepen Creek area. The objectives of this project are the protection and enhancement of surface and groundwater resources for human consumption, for fish and wildlife, and for recreational and esthetic uses. A plan to meet these objectives was prepared by Guilford County.

The plan recommended the construction of an interceptor sewer line running the length of the Horsepen Creek basin with a maximum size of 42 inches. This proposal stimulated considerable controversy among citizens in this area.

The concerns expressed included the potential degradation of water quality and other growth related impacts. Based upon these concerns, the Environmental Protection Agency and the North Carolina Department of Natural Resources and Community Development have prepared an Environmental Impact Statement.

This EIS covers only the Horsepen Creek segment of the Greensboro-Guilford County 201 Facility Plan. The other portions of that plan dealing mainly with the site location for the South Buffalo Creek wastewater treatment facility have been covered in a previous EIS.

The objectives of this EIS are to establish the existing conditions in the Greensboro area, to evaluate alternatives for wastewater transmission treatment and disposal, to assess the environmental effects of the proposed action, and to recommend mitigative measures to avoid adverse impacts.

In the draft, six system alternatives were investigated in detail. Alternatives 1 through 4 provide sewer service throughout the Horsepen Creek basin and can be sized for existing or projected year 2000 flow. Alternative 5 is the no action alternative which maintains the existing Horsepen Creek collection system.

Alternative 6 involves a system to discharge industrial flow into the South Buffalo Creek collection system and the maintenance of the existing Horsepen Creek collection system. In both alternatives 5 and 6, wastewater generated from new residential development will be served by septic tanks.

These alternatives were then subject to a cost and environmental evaluation. The major input into the environmental evaluation was a water quality monitoring and modeling program which was conducted as part of the EIS. Kirk Holland of Radian Corporation will discuss this analysis following my presentation.

The results of this alternatives evaluation show that water quality and land use impacts are the most significant to this project. Selection of the no action or modified no action alternatives would encourage low density development throughout the basin. The existing service alternatives would also generally tend to encourage low density development with a limited amount of higher density development connected to the new sewer line.

The future service alternatives will provide for much higher development densities throughout the basin. In the short term, this development will probably be concentrated adjacent to those areas currently developed. Ultimately, development would probably occur throughout the basin.

The less intensive land use densities of the existing service alternatives will minimize the concentration of pollutants generated in urban runoff. These alternatives will have a significantly smaller potential adverse impact to water quality in Lake Brandt than the future service alternatives with their substantially higher land use densities.

Other potential adverse impacts to water quality could result from problems with the existing system of lift stations and septic tank failures. The no action and modified no action alternatives would not alleviate these potential hazards.

Alternative 1E and 2E would do the best job in this regard by eliminating all but one lift station. Alternative 2E is considered the most environmentally acceptable alternative since it alleviates the existing problems with the smallest encouragement of high density development.

An important part of the preparation of the EIS has been the input of the EIS Advisory Committee. This group consists of representatives of local governmental bodies and citizen interest groups. This Committee has reviewed and commented on all EIS outputs and has suggested alternatives to be evaluated.

Following publication of the draft EIS, EPA and the state received new existing flow information and other related information generated by the County and the City. A detailed review of this information will not be done at this time because an EIS document is not the appropriate place for detailed design information.

This design analysis will be done during the Step II Phase of detailed project design following completion of the final EIS. The pipe sizes presented in the draft EIS were estimates based upon the information available. The specific diameter of the pipe that is finally selected will not affect the choice of alternative in the EIS.

The purpose of the EIS is to choose an alternative for service among those viable alternatives identified in the EIS process. The diameter of the pipe that is selected will be that which is necessary to accommodate the alternative that is chosen in the final EIS.

We would now like to introduce Mr. Kirk Holland from Radian Corporation who will discuss the monitoring and modeling program.

MR. HOLLAND: Thank you.

My name is Kirk Holland. I am the Program Manager for Radian Corporation in Austin, Texas. Radian was commissioned to perform a comprehensive environmental impact statement for the Horsepen Creek Interceptor pursuant to the National Environmental Policy Act.

The assessment was to use readily available existing information and professional judgment in the interpretation of those data.

In the course of our analysis, it became clear that more data and more interpretative analysis was required to gauge the water quality effects of the interceptor, particularly the secondary water quality effects of the Horsepen Creek Interceptor on Lake Brandt.

The reason for this belief was that the interceptor has potential for encouraging intensive land use in the basin. Furthermore, the water quality effects from the intensity of this land use are uncertain. National weather data indicates that generally urbanizing areas have potential for creating pollutants that may degrade water quality, particularly those that are used as water suppliers of the water supplies.

There is also a strong indication that such effects are quite site specific and require site specific studies to ascertain the effects.

The general methodology that we used was to monitor and then model the water quality of the Horsepen Creek basin under several different development scenarios. We monitored the current conditions in Horsepen Creek in a basin that is believed to be similar to the way Horsepen Creek basin could evolve in the design period, mainly the uppermost portions of North Buffalo Creek above the point source discharges.

This essentially represented what we feel is a representative mix of residential, commercial, industrial land uses in the area.

Then we projected the impacts that will accrue from further development of the Horsepen Creek basin using the monitoring data to calibrate a model that would give us an indication of what water quality impacts could accrue upon such development.

I emphasize the word "indicate." This is not a perfect predictor. The state of the art in water quality predictions does not allow such prediction at the present time.

It should also be noted that other methods which are somewhat less sophisticated than those that were used in this study predict higher pollutant levels than the ones that we predicted; that is, worse water quality effects.

However, we believe that this methodology that was used represents the best available tool presently at hand to evaluate these water quality impacts.

The monitoring data indicated that the water quality of Horsepen Creek itself is good: low bod's, high desolved oxygen, fairly low dissolved solids. The monitoring data indicated that Lake Brandt has fair to good overall quality. The water is soft; conductivity regions below which indicate low levels of dissolved solids. pH measurements are slightly acid to nutrient, which are typical of forested areas.

However, there are wide seasonal variations in the pH of Lake Brandt. It should be mentioned that our monitoring program was carried out during a time when the lake level was at a low elevation. This would enhance any adverse water quality processes that would tend to degrade the water quality.

The low total alkalinity in Lake Brandt provides low buffering capacity to resist any pH changes. This makes the lake susceptible to upstream discharges and variations in water quality, which might tend to alter the pH. These changes in pH in the lake could indicate that geochemical processes that result in concentration of adverse water quality parameters could occur. I am not saying they do occur, but there is a potential for them to occur.

The heavy metals concentrations in particular are generally low on the lake with two possible exceptions: one is lead, and the other is arsenic. Our monitoring data indicates that the lead concentrations in the Horsepen Creek arm of Lake Brandt and at the dam on Lake Brandt exceeded the maximum concentration of lead for protection of fishlife.

One of these values also exceeded the concentration for protection of public drinking water supplies.

It should be noted that other evaluations have not shown lead concentrations this great. But remember, we were sampling during a more or less worse case condition with respect to lake water quality.

Arsenic concentrations, while low in Horsepen Creek itself, appear to be concentrated in the lake water quality. We inferred that this could be recycling of arsenic-contained sediments in the bottom of the lake. The sources of arsenic in the lake are unknown.

The trophic state of the lake is described as moderately eutrophic. It does firmly stratify, and dissolved oxygen is depleted in at least the bottom portions. There is also noticeable chemical stratification during the summer months. This indicates a considerable degree of organic decay processes and concomitant biological activity within the Lake Brandt ecosystem.

Aquatic macronutrients, hydrogen, phosphorus, while not present in extreme concentrations, are present in quantities more than adequate for excessive growth of aquatic vegetation. Lake Brandt is particularly susceptible to nutrient inputs because of its shallowness.

With this monitoring data set into context, we calibrated an urban area runoff model called the "storm model storage treatment overland flow model" developed by the Corps of Engineers for modeling processes in urban areas with specific reference to eight different parameters. Of these parameters, suspended solids, total nitrogen, orthophosphorus were of primary importance.

The storm model does not treat heavy metals in anything other than a conservative parameter; that is, no removal processes are taken into account. In this respect, the model is conservative if it is used for heavy metals.

The model was calibrated to the upper North Buffalo basin and was exercised for different development scenarios, various levels of development and various kinds of development; that is, with full sewage service and with septic tank service to try to gain appreciation for the sensitivity of land use effects on water quality.

We found that the detrimental effects on water quality was proportional to the extensiveness and intensiveness of development. Beyond that, we detected in the modeling results that there was some difference between the full sewage service and full septic tank service impacts. I should also mention, and I should have mentioned earlier, that the storm model was only applied to that area which was urbanized. Other parts of Horsepen Creek basin were non-urban in character, and these were modeled using correlations based on the universal soil equation of the

Soil Conservation Service.

In aggregate, the urban plus non-urban pollutant loadings through the design year, using these statements, the development scenarios could be ranked in the following order: from best to worse in terms of water quality. This is based solely on pollutant loadings from Horsepen Creek to Lake Brandt. Best would be serviced only by sanitary sewers. Second best would be sanitary sewer service for the existing development only, followed by expansion of facilities to serve the existing development; no action, and worse could be future service based only on septic tank service.

Now, that ranking which ranked service only by sanitary sewers first and future service only by septic tanks last, more or less valued the range in water quality impacts that we felt could accrue under a full development scenario.

However, in terms of the overall environmental benefit ultimately from a water quality prospective, we believe that sanitary sewer service of existing development only, if accompanied by appropriate institutional safeguards--not necessarily prohibitions on anything for further development-- appears most attractive.

On the other hand, the no action alternative appeared most detrimenal. The other alternatives of development scenarios, if you will, each have at least one compelling disadvantage relative to the best one, including conceivable higher lead loadings during commercial and industrial development. This has to do with the traffic that would be generated by development in the basin, and particularly, industries in the basin.

Development of environmentally sensitive land, particularly with a full septic tank development and encouragement of much higher density development beyond the planning period--in the period beyond the year 2000--this effect would accrue with development with full septic tank service. Development only--I am sorry--accrued only with development by full sewage.

Development only by septic tanks would more or less consume all available land in the Horsepen Creek basin by the design year, and in fact, could encroach upon some environmentally sensitive lands.

Of the pollutants considered, suspended solids, lead and phosphorus appear to us to be of most concern;on these lead loadings are most insensitive to the sewer versus unsewered development. They are sensitive to the intensity of development, the density of development, if you will.

Suspended solids are probably most sensitive due to the magnified impact upon the light transmission properties of the lake life and possible eutrophication problems that they may engender.

These suspended solids effects would be increased for any alternative which encouraged greater septic tank development.

The results of our study affected to some extent the choice of the alternatives. I should say the monitoring affected to some extent the choice of--environmental monitoring affected the choice of alternatives. However, the monitoring and modeling results have to be viewed in context of the total water quality picture. So, therefore, they provide only partial input into the choice of alternatives.

If we had to summarize our basic findings with respect to the results, it would appear that sewering in the future population would provide for generally higher density growth development ultimately, which is undesirable from the water quality prospective, particularly in the water quality affected is a public water supply.

We felt like the existing system of lift stations, force mains, which is fairly complex, should be reduced to decrease the probability of surcharging overflows and more or less periodic catastrophic water quality degradation.

Our control future growth solely using septic tanks is also undesirable due to general poor soil suitabilities, development of environmentally sensitive lands, and increased probability of malfunctions of the septic tanks.

Thank you.

CHAIRMAN HARVEY: Thank you very much.

Ladies and gentlemen, I would like to express the wishes of the panel to limit your testimony this evening to a period of ten minutes. I think that that will enable everyone who is going to speak to give their full consideration to the panel.

I would also ask that if any of you have prepared texts, if you have a copy of the same, if you could provide the panel with a copy to enable us to more closely follow your remarks, it would be gratefully appreciated.

Unless there are any questions on those two rules, at this point I would like to begin our public participation by calling upon Mr. Forest Campbell, Chairman, County Commissioners.

COMMISSIONER CAMPBELL: Mr. Harvey and members of the panel, we have reviewed the Draft Environmental Impact Statement and we are very concerned about the wisdom of the decision to select less than an adequate sewer system.

It has been our position since 1966, that this interceptor sewer system be designed to accommodate the existing and full future development of the basin. This remains our position today.

The EIS acknowledges the poor suitability of soils in the basin to accommodate properly functioning septic tanks. We agree with this fact.

The EIS states that full development of the basin will occur eventually no matter the existence, configuration or capacity of any public sewer system. We agree with this conclusion.

The EIS assigns detrimental impacts to Lake Brandt from malfunctioning septic tanks. The EIS points out the sprawl and inordinate consumption of open space in the basin accompanied with development of septic tanks. We agree with this conclusion as well.

We strongly disagree with the Document's inference that local government has an inadequate desire and/or regulatory tools to greatly mitigate many of the secondary impacts created by the full basin development on public sewer.

Available to us locally is the City-County Water and Sewer Extension Agreement which provides policy and direction for managing these services. Since 1964, we have utilized our zoning authority to regulate types of development. In fact, our Planned Unit Development Zone, which is specifically designed to protect watershed areas and to create open space, will not work under a septic tank development scenario.

We have our Subdivision Ordinance and our Erosion and Sedmiment Control Ordinance. A Stormwater Management Ordinance is presently under consideration. The County and the City of Greensboro Planning Departments, in conjunction with the Regional Council of Governments, have been, and remain, involved in long range planning for the area. Thoroughfare planning in the area has been accomplished in conjunction with the City and the Department of Transportation in the State of North Carolina.

Our record clearly indicates a vital local concern for water quality. Many of our developmental zones are specifically geared to regulate watershed development. We have long discouraged the location of "wet" industries in our community.

It is, in fact, this concern for Lake Brandt that we feel that if the basin is to eventually develop fully, then the development should be placed on public sewer rather than septic tanks.

We are convinced that the decision to knowingly install a less than adequate sewer will have grave consequences, both environmentally and financially, for us in the future.

EPA does have the option to endorse a much more sound concept. We, the local leaders of government, ask that you support and assist us by exercising that option. We think that you should select a system which will much better meet our future needs and afford longer-term protection than the alternative chosen in the Draft Environmental Impact Statement.

And in addition to that, I have an attachment, a letter dated today, addressed to the Regional IV Administrator for EPA, which contains more specific concerns that we have with the Draft EIS. I would like to call those to the attention of the panel at this time:

". . .We feel the use of 70 gallons per day per capita is too low in computing flow projections."

". . .The assumption that all industrial waste by-passes the Stage Coach Trail Life Station is erroneous."

". . .Wastewater generation from the Brush Creek Basin," which is the Cardinal

Corporation System, "to the north should be

handled by the Horsepen Life Station rather than retaining the Brush Creek Station in such close proximity to the proposed system."

". . .The system should be designed to accommodate flows from the Airport Terminal Complex," projected to be ". . .60,425 gallons per day by 1985, and 153,000 gallons per day by 1995."

". . .According to flow figures provided recently by the City of Greensboro from on-site monitoring efforts, the 2E System as described in the Draft could not accommodate today's flow, much less 'limited' growth in the future."

". . .The Draft should incorporate, in much more concise terms, the mitigating measures for secondary impacts available to and utilized by local government,"

which I have summarized previously."

". . .The treatment capabilities of the Lake Townsend Filter Plant should be more fully addressed."

". . .The Federal mandate to ultimately

eliminate the use of leaded gasoline should be addressed in the discussion of projected lead loading levels in Lake Brandt."

". . .We are disappointed with EPA's selection of a 'limited' growth alternative. We in Guilford County can and have certainly attempted to direct and regulate growth, but as the Draft points out, the basin will continue to develop long after Alternative 2E has reached capacity."

We ask then:

". . .Will we then be in the same predicament in which we find ourselves today?"

". . .We respectfully request that the longer-term impact of basin development be fully considered before a final decision is made by your office."

In addition to that, I have a further attachment which I will hand out without reading which contains many more of our concerns with regard to more recent findings under our studies.

Thank you, sir.

CHAIRMAN HARVEY: Thank you.

Before you leave the microphone, may I ask if the Co-Chairman and any of the panel members have any questions that you wish to address at this time to Mr. Campbell?

(No response.)

CHAIRMAN HARVEY: Very well, then.

Thank you very much, sir.

COMMISSIONER CAMPBELL: Thank you, Mr. Harvey.

CHAIRMAN HARVEY: The panel desires to recognize Mr. Jim Melvin, Mayor of Greensboro.

MAYOR MELVIN: Mr. Harvey, ladies and gentlemen, members of the panel, I would prefer personally to ad lib and to speak from the cuff, but because of the importance of this subject and the need to be sure that everything that I intended to say is properly before you in the record, I will read my prepared statement which I will furnish to the Committee right after my presentation.

Hopefully, this is the last hearing that will be necessary in order to make pollution a vagrant in Guilford County a reality. We have finally decided on a site for the metro plant. We have decided that an outfall in Horsepen Creek is desirable and has less adverse environmental impact than for the area to develop on septic tanks.

What we will be discussing tonight, and I want to emphasize this, should be the function of Step II Design Phase of this project and not of the Step I Planning Phase.

We have carefully studied the Draft Environmental Impact Statement. We are in agreement with many of the conclusions which have been known for years. The City of Greensboro has worked closely with Guilford County since 1965, to provide an orderly development of a larger supply of sanitary sewer systems for those in our community who happen to live and work outside the corporate limits of the City of Greensboro.

I might add that this joint cooperative agreement was signed even before the formation of the EPA. The agreement in existence has been a model for others throughout this country, and it has been successful. The intergovernmental relationship between Guilford County and Greensboro has been contributory in making the quality of life in this community so good that a recent study by the University of Nebraska has ranked us fifth best community in this nation in which to live.

I might add that we were in some mighty good company.

As previously pointed out by my colleague, Forest Campbell, Chairman of the Guilford County Commissioners, regulation of the development has been controlled by zoning. Subdivision ordinances and erosion and sedimentation control ordinances are in effect. And I might restate that: they are in effect.

Stormwater management will be a reality shortly. The County and City now are planning for a long-range water supply project in conjunction with the state and Federal Government.

I cite these to show what local government is doing to enhance the environment in which we live and to refute this statement in the Draft EIS that:

> ". . .a lack of desire to mitigate secondary impact exists within local government."

And quite frankly, we take that charge very seriously and it hurts us deeply. We have the tools and the will for good environmental quality control. I might add here that the Draft EIS does recognize that mitigating methods to protect the quality of water in Lake Brandt are already in use or proposed. More importantly, we have the support of the people.

A survey completed this month indicates that over seventy percent of the people in our community feel that the quality of life in our community has improved since they have lived here. The survey also indicates that they are vitally interested in environmental matters.

That same study showed that nearly eighty-five percent of those surveyed gave high marks to both local governments regarding regulations, services and taxes. So, we must be doing something right.

It is fashionable to blast the EPA at every opportunity. But I am going to forego that opportunity tonight. It is our sincere feeling, however, that the EPA has gotten some very, very bad advice from its consultant. And as late as this afternoon, the Radian Corporation, who is the consultant, admitted that they overlooked and left out vital and significant information which are pertinent to this decision that we are here for tonight--as late as this afternoon.

But then everyone errs occasionally. And all that we ask is that EPA not take a concrete position on specific pipe size, but rather let the engineers design the system based upon existing conditions, being consistent with the agreed upon population to be served in the year 2000.

If this is done, we are confident that the interest of all can be served to the fullest. I would close by emphasizing three major points: one, the engineering relating to the pipe size quite frankly is lousy. When pipe twenty feet deep supposedly cost the same to install as an equivalent size pipe six feet deep and then do not even then conform to the required state standards, then lousy is the kind--is the only word that I can use.

I suspect that the main problem is that they did not know which way the sewage flowed by their own admission this afternoon.

Two, controls dealing with growth in the basin to protect the quality of water in Lake Brandt are in place and are acknowledged in the Draft EIS, which refute many of the things that Mr. Harvey pointed out earlier.

Three, the question of 208 Planning, and I want to emphasize this. The question of 208 Planning is of no concern in this question. We have been told repeatedly that 208 would never be a question. And yet, again, as late as this afternoon, we were told that it was a concern.

Where an area is not designated as a 208 area and the responsibility becomes one of the state, in this case, North Carolina, the plan which the county has set forth for handling the wastewater in Horsepen Creek is not an unreasonablr one.It is acceptable to the

State of North Carolina and to the City of Greensboro, and we wholeheartedly support it.

Thank you very much.

CHAIRMAN HARVEY: Thank you, Mr. Mayor.

Any questions from any of the panel members?

(No response.)

CHAIRMAN HARVEY: Apparently not.

The panel recognizes Charles Melvin of the Greensboro Chamber of Commerce.

MR. MELVIN: Mr. Harvey and members of the panel, my name is Charles Melvin. I am President of the Greensboro Chamber of Commerce.

The Chamber is a voluntary organization of over 1800 civic and business members who are vitally concerned with the orderly growth and development of the Greensboro area.

We understand that the purpose of tonight's hearing is for EPA to receive comments on the Draft Environmental Impact Statement for the Horsepen Creek basin. We also understand that there are questions of fact yet to be resolved between EPA and the Council. These questions, as we understand them, relate primarily to the existing and anticipated sewage flow and engineering factors concerning the design of the collection system.

We urge EPA to meet with the Council and to resolve such questions in a mutually satisfactory manner.

The Chamber has worked for a number of years in a cooperative relationship with Guilford County and the City of Greensboro. We believe that these coordinated efforts have been very beneficial to our community. The Chamber urges that EPA in this matter also work closely with Guilford County to achieve a wastewater collecting system adequate and appropriate for the level of development forecasted to occur.

The Chamber is very vitally concerned about wastewater facilities in the Horsepen Creek basin for several reasons: first, it is the community's major growth center with significant residential development; second, as the center for industrial growth, it is an area which affords residents of our community opportunity for increased jobs or increased employment levels in the future; third, of course, has been pointed out here, and it is a watershed for our community's water supply.

We are vitally interested in the protection of that supply.

Fourth, because of the extensive urban development which has already occurred in that basin, we are anxious to see the completion of a public wastewater collecting facility in order that septic tank-type development need no longer occur in that area.

For these reasons, the Chamber of Commerce urges construction of an interceptor sewer adequate to serve the ultimate development in the basin area. If EPA does not concur in this position, we believe that the public interest requirement that a system consistent with optimum community development and a meaningful cost benefit relationship and evaluation be constructed.

The Chamber urges elimination of any additional delays. Accordingly, we support construction of an interceptor sewer judged by the county based upon sound engineering studies to be appropriate for existing and future development of the Horsepen Creek basin.

Thank you very much.

CHAIRMAN HARVEY: Thank you, sir.

The panel would call upon Tom Hubert, also of the Greensboro Chamber of Commerce.

MR. HUBERT: Mr. Harvey, panel, ladies and gentlemen, my name is Tom Hubert. I am Chairman of the Chamber's Council on Community Planning and Development.

The Board of Directors of the Chamber of Commerce has charged our Council with maintaining and improving the quality of life for all of our citizens.

We, indeed, are proud of the quality and the integrity of our local governments, both elected and at the staff level.

We are appalled that the Radian Corporation could submit and that EPA would accept such an incompetent paper--an expensive research paper--paid for by we, the taxpayers, that did not consider existing conditions, utilize available topo maps or bother to check the flow of existing lift stations.

We are very concerned that the Federal Government, in this case in the form of EPA, would attempt to dictate to local governments how to control their affairs.

The innuendo that our local government is incompetent and unable to properly legislate local ordinances is unconscionable, in my opinion.

These are not truths, and we ask that EPA not make a decision on this important interceptor sewer based on the incompetent document that has been presented to me this date at least.

The Chamber has consistently supported the objective of providing an interceptor sewer sufficiently large to accommodate local development of the Horsepen basin. The reasons for this position of the Chamber are several: first, the area will continue to develop as a consequence of the reasonable economic forces at play, the demand for housing and industries in the basin itself; second, a sizeable investment in public and private facilities has already been made. The investment would be wasted if a reasonable development does not permit it; third, the area is in the watershed of Lake Brandt. The center septic tanks and lift station can be eliminated within this basin. The centers of the community will be assured of protecting one of its valuable water supply reservoirs. Fourth, economy demands that the maximum size interceptor sewer consistent with development objectives and environmental considerations should be constructed now.

The Chamber finds a hindrance in achieving its objective in the Draft EIS. It appears that EPA is proposing to control the density of the development within the basin. We believe this and related land use decisions are solely the responsibility of appropriate and competent local government.

The Draft EIS suggests that EPA prefers an alternate interceptor sewer which would accommodate the existing development plus a limited amount of new development. In rough numbers, this appears to convert to an interceptor sewer capable of handling the wastewater flow generated by the 3,000 existing residents plus approximately 4,000 additional residents by the year 2000.

However, this leaves over 6,000 individuals who would have to be served by private sewer systems or be denied the opportunity to live in the Horsepen Creek basin.

We share EPA's concern for protection of Lake Brandt. After all, we drink the water, and you all don't. We share the concern of the adverse effects of septic tanks upon Lake Brandt. Consquently, we urge EPA to select an alternate which protects the water, allows a reasonable level of development and eliminates existing septic tanks, as well as prevents the need for future septic tanks.

This would necessitate, as a minimum, an interceptor sewer of sufficient size to accommodate the flow anticipated from the forecast of population for the year 2000 of over 18,000 people.

Greensboro has good development because of its responsible private developers and the quality of its public leadership. Our community's planning has been good. The regulation of land use has been good. Growth will surely occur in the Horsepen Creek basin irregardless of what we do here this evening.

The question before us all is how to insure the continued high quality of development of our community, and at the same time protect the Lake Brandt water supply.

We believe the best way to do this is to get rid of septic tanks. We need an interceptor sewer adequate to serve the anticipated level of development proposed to be permitted under city and county land use plans, policies and regulatory ordinances. I might add to include the city, county and state, with Howard Lee's addendum to the EIS papers.

Thank you very much, sir, for your time.

CHAIRMAN HARVEY: Thank you, sir.

The panel will call upon Mr. Rhodes Corbett.

MR. CORBETT: Mr. Harvey, gentlemen, I am Rhodes Corbett, Vice Chairman of the Greensboro Chamber of Commerce, Council on Economic Development. I am here to state our concern about the potential adverse economic impact of an interceptor sewer improperly sized for Horsepen Creek basin.

The basin is the community's primary growth area. Its population exceeds 8,000 people today. By the year 2000, the population is expected to be more than 18,000 people. It is also the community's primary industrial growth area, and in the properties near the airport, over 3,000 acres are zoned for industrial use.

Over 600 acres are currently used for industrial purposes. This area, incidentally, is served by sewer lines considerably larger than the line proposed in the tentative draft.

Additionally, there are over 2400 acres yet available for development in this industrial zoned area. This constitutes this community's largest single concentration of such property and subsequent resource base for new job opportunities.

According to the Draft EIS, there appears to be constraints placed upon the commercial and industrial development, with prior reports having suggested a limitation of 210 acres of commercial development and 150 acres of industrial development being allowed by the year 2000.

This type of land use decision can best be made by the appropriate local government in response to a demand for such land and a consideration of our community's best interest.

Any limitation of commercial or industrial acreage on an arbitrary basis by any Federal agency is inappropriate. Such a position by any Federal agency is contrary to the President's National Urban Policy objective of creating new jobs in our urban areas. In addition, such arbitrary decisions are not consistent with the President's policy establishing a new urban partnership between the public sector and the private sector, which will foster the creation of new jobs.

I would like to summarize the Chamber's position. First, responsive, public agencies should construct a sewer adequate to serve existing and future development, since the area continues to be the most desirable area for residential and related development. Secondly, continued industrial development in the airport area is essential to the economic strength of this community and to the creation of new jobs for this community.

Third, local governments are the appropriate agencies for exercising developmental decisions as to the extent and type of land use to be allowed within the basin.

Fourth, there appear to be reasonable alternatives to protect Lake Brandt for the period of time which it will continue to be needed as a water supply reservoir. Let me again emphasize what our Chamber of Commerce President, Charles Melvin, has already said: if EPA does not concur and change its position, then we urge that an agreement be reached between EPA and Guilford County to provide an interceptor sewer and other wastewater collection system facilities sufficient to serve an appropriate level of development consistent with a meaningful cost benefit analysis of land development and related factors within the Horsepen Creek basin.

Thank you.

CHAIRMAN HARVEY: Thank you.

The panel recognizes Mr. Fred Clapp, representing the Greensboro Board of Realtors.

MR. CLAPP: Thank you, Mr. Harvey. Members of the panel, I have been authorized by the Board of Directors of the Greensboro Board of Realtors to enter this statement into the public record. We will not join the technical issues of correct line sizes. Although the discrepancies appear serious enough that one might question the credibility of the consultant's entire report, we believe that all agencies involved are properly motivated and possess the requisite engineering skills necessary to satisfactorily resolve that matter.

It is our understanding, however, and reconfirmed in the meeting this afternoon, that regardless of the eventual line size, it is EPA's intent to fund a sewer only to the existing population plus hopefully, at least, providing limited additional capacity.

The proposed action, we believe, will adversely affect housing, and quite possibly the economic stability of the community.

This summer, a special Task Force on Housing Costs appointed by the Secretary of Housing and Urban Development, pinpointed excessive Government regulations as a major contributor for the current high cost of housing.

The National Association of Realtors estimates that over-regulation currently adds approximately twenty percent to housing costs, or about $9,000 to the cost of today's medium-priced new house.

Inasmuch as trends in existing home prices closely follow those of new ones, such over-regulation affects all potential home buyers.

In response to the study, HUD Secretary Harris has announced, among other actions already underway, that HUD will work with state and local governments for reasonable standards for land development and in planning for an adequate supply of usable land. We submit that the proposed action is an example of such over-regulation and will necessarily increase the cost of housing by increasing the minimum lot sizes and prices and increasing the development costs for additional streets, power, telephone and gas lines, et cetera.

The low density development proposed will also severely restrict, if not deny, the developer's ability to effect the economies of building cluster houses or patio homes and attached town houses for sale and apartment dwellings.

In the marketplace, the desirability of residential development in our northwest section has already been established, and we are all agreed that eventual full development of the basin will occur, even if on septic tanks.

This low density proposal, however, will further restrict the supply and cost of land in a market already characterized by a type and control supply of land. Further, in such a low density development, it will be more costly for the community to maintain central public services, such as transportation, schools, recreation facilities, et cetera.

The resulting increased cost must necessarily be borne by the taxpayers through increased property taxes, and therefore, again, increase the cost of maintaining a home. At a time in our history when low income families have already been forced from the private housing market, and we are rapidly pricing middle America out of the private housing market, the impact of the proposed action on housing costs should not be ignored.

The most serious economic implication of the proposed action to the entire community, however, is the implied restriction on industrial development. We admit the confusion and frustration about the rather casual treatment of industrial development in the Draft EIS. It is elementary and fundamental that sound industrial growth is necessary to provide employment opportunities and to expand the tax base in order to be able to maintain a reasonable level of local taxation.

Substantial public and private investment has already been made in the airport industrial area, and it would be physically irresponsible not to keep fully utilized the facilities and land provided by such investment.

EPA's consultant states that any future investment or development in the basin will not be eligible for sewage funding by EPA. And the proposed action would apparently divert all industrial sewage to the South Buffalo Plant. Yet the consultant claims that industrial development is limited primarily by the size of the collector and outfall sewers in the South Buffalo basin, and further, that systems modifications necessary to sewer future industrial growth and the airport will require at a minimum replacing the major collectors and outfall sewers to the South Buffalo Treatment Plant.

The cost of such action may well be greatly in excess of that of the Horsepen Creek interceptor line itself, and will be presumably entirely the expense of the community. Indeed, the metro plan accepted did not provide for any specific collection interceptor system expansion.

The proposed action, therefore, appears to directly and indirectly impose extreme limitations on the community's ability to provide for a desirable expansion of industry. The adverse impact on housing and industrial development resulting from this proposed action are not in the best interest of the community.

We submit that the community will best be served by the selection of Alternative 1F, which basically would provide full sewer service to the entire basin. We are not insensitive to the potential hazards of development within any watershed. However, we are not persuaded by the EIS that the low density disbursement of housing and the addition of 2,500 septic tanks to the basin is the proper way to handle development.

The EIS addresses itself to the introduction of pollutants into Lake Brandt, but it is silent concerning the technology of removing pollutants by water treatment methods. Further, the EIS on the one hand addresses itself to lead loadings in Lake Brandt from automobiles associated with development in the basin, and yet, on the other hand, ignores existing Government regulations that require us to drive less efficient, more expensive automobiles that are restricted to the use of unleaded gasoline.

The community's ability to manage growth in the basin has been questioned. Yet the EIS concedes that:

> ". . .Many other measures required to promote orderly development of the Horsepen Creek area and preserve the water quality of Lake Brandt already exist."

Indeed, one condition of the grant is that an erosion and sedimentation control plan must be submitted to EPA for approval. County regulations dealing with control of stormwater runoff are under study and awaiting finalization of state plans for such control.

The Board of Realtors believes that the county and city can and will implement adequate measures for orderly development. The Board will support and cooperate with such reasonable measures as may be required. We stand firm in our position that local governments are the proper authorities to control land use and development regulations within local bounds.

We further submit that the coummunity must finally recognize the fact that Lake Brandt cannot be indefinitely counted upon as a major water supply source, and that within the twenty years design period, we must look beyond our present water storage system for an adequate water supply.

On balance therefore, we cannot support the proposed action as being in the best interest of the community. And we urge the Director to reconsider the recommendation. Thank you.

CHAIRMAN HARVEY: Thank you, sir.

The panel chooses to recognize Dr. Paul Lutz, representing the Guilford County Advisory Board for Environmental Quality.

DR. LUTZ: Mr. Harvey, apparently the EIS Statement is like a big fruit basket. One can pick and choose what one likes and ignore the rest. Apparently that is what has gone on heretofore.

There is a temptation for me to do exactly that way; that is, pick and choose what I want to talk about in the EIS and let the rest alone. I think rather than getting into that argument, I would simply like to read my prepared statement and then sit down.

Ever since its inception in 1972, the Guilford County Advisory Board for Environmental Quality has considered that the problems associated with water are the most serious and urgent environmental issues facing Guilford County now and in the future.

Our Board has ranked as a priority concern the water quality and quantity, and this deep concern has been manifested in many different forms in the last six years of the history of this Board.

Since the Horsepen Creek interceptor project directly impinges on water quality, our Board has taken an unreasonable amount of interest in this project and its Environmental Impact Statement. Board members have brought considerable professional insight to bear on many parameters of this entire project.

The Advisory Board is unswerving in its deiligent pursuit of maintaining and even enhancing water quality for all of our citizens. This Board has never been against growth or development so long as those factors did not significantly contribute to environmental degradation.

But we are resolved in our conviction that water quality degradation is directly proportionate to urban and suburban densities in the watershed. We believe that the spreading urbanization adds numerous exotic--that is, rare or unusual chemicals and compounds--to water supplies in very subtle amounts.

Further, we are convinced of the real possibilities of very severe human conditions that do result from the protracted domestic use of water which is compounded immediately downstream from the large suburban areas.

There is a growing body of scientific studies to support and validate these concerns. The spector of the carcinogenic, pathogenic, teratogenic and mutugenic effects induced by deteriorating water supplies is a bleak, grim prospect for the future.

We believe that population densities in the watershed must be kept low in order to preserve an acceptable degree of water quality.

The Horsepen Creek project is a classic example of the potentiality of completely degrading a municipal water supply by developing suburban areas in the watershed. The installation of a sewer interceptor line in the basin will certainly foster more intense development. More people would bring increased amounts of a variety of exotic chemical compounds and metals that already threaten to destroy irreversibility water quality in all the lakes downstream.

Therefore, the Guilford County Advisory Board for Environmental Quality feels that Alternative Number 5, the no action alternative, offers the best long-term protection of water quality. And we encourage that Alternative 5 be substituted for Alternative 2E as recommended in the EIS.

The Advisory Board has, over the past twenty months, consistently advocated to the Board of County Commissioners that population densities must be kept comparatively low in this fragile watershed. We have strongly urged the Commissioners to support measures that would minimize growth in the basin and will retard runoff in the impoundment.

We will continue to advocate for mitigating conditions which will reduce the chances for the water supply to be damaged further. But the influence of the Advisory Board to institute protective measures is limited, and we need any additional help to regulate density in this watershed.

Alternative Number 5 will do precisely that. Thank you.

CHAIRMAN HARVEY: Thank you, Dr. Lutz.

The panel recognizes Mr. Austin Elliott, representing the Environmental Action Coalition.

MR. ELLIOTT: My name is Austin Elliott, and I am a member of the Environmental Action Coalition.

The Environmental Action Coalition is a group of local citizens and organizations whose main concern is the preservation of water quality of the Lake Brandt reservoir. We are not against orderly growth in our community. But we do realize that an urbanized watershed can be hazardous to the health of those who depend upon it for drinking water. Greensboro will be dependent on Lake Brandt for many years to come.

In 1974, our group brought suit in Federal Court against the Environmental Protection Agency, asking that an Environmental Impact Statement be prepared on the Horsepen Creek project as required by the National Environmental Policy Act.

Now the Environmental Impact Statement has been prepared. The Radian Corporation has made several recommendations to the EPA which we find highly significant.

Most interesting of all is the recommendation against funding the Horsepen project without, and I quote, "a more detailed long-term study of the induced impacts to Lake Brandt."

A copy of these recommendations is attached since it does not appear in the Draft Environmental Impact Statement.

A few months ago, we were looking favorably upon the selection of a proposed action Alternative 2E. It seemed to us to be a reasonable compromise, since we do acknowledge a need for providing service for the existing industrial wastewater in the airport area, and the pipe sizes in the residential part of the basin were projected to be quite small.

However, since that time, the city and county have claimed that Radian's calculations are in error and that a pipe projected to be twelve inches in diameter really needs to be twenty-seven inches in diameter.

This would provide a five-fold increase in the carrying capacity of the pipe. While we acknowledge that small errors in projecting pipe sizes could occur at this stage of the process, an error of this magnitude simply defies belief.

These recent actions on the part of the city and the county have caused us to reconsider our support for Alternative 2E, and we now feel that the best alternative is the modified no action configuration which would simply provide a new line for routing the industrial wastewater from the airport area to the new metro plant by way of South Buffalo.

Normal growth could proceed in the residential part of the basin on septic tanks installed under more strenuous regulations. We find the suggestion for mitigated measures described in chapter six of the Draft EIS to be excellent. But unfortunately, they carry no real weight, since they depend on local governments for voluntary implementation.

This is a disappointment to us, since local policy makers have not up to now exhibited any great commitment to the preservation of water quality or land use planning.

We had hoped that EPA would be able to build in more mitigating measures as conditions of the grant. The fact that they did not is an additional reason why we prefer Alternative 6 over the proposed action.

If the alternative selected includes pipes which are sized to provide for more growth than the amount permitted by the Clean Water Act, then the Environmental Action Coalition will initiate litigation on the grounds that this project is not consistent with the intent of that action.

In closing, we would like to thank the Environmental Protection Agency for providing so many opportunities for public input in the process of making this decision, which is of vital importance to all of us as local citizens.

CHAIRMAN HARVEY: Thank you very much, Mr. Elliott.

The panel recognizes Mark Schott, President of the Greensboro Jaycees.

MR. SCHOTT: Gentlemen, it is my preference to give my testimony from up here in front. I believe everybody can hear me in the back of the room.

CHAIRMAN HARVEY: Would you desire to use the podium?

MR. SCHOTT: No, thank you, sir. But I believe that I will be able to see your faces and you ought to be able to see mine. And I don't think that halfway back of the room accomplishes that purposes. I do believe that your isolation at the front of the room from the testimony halfway back in the room is symbolic of the isolation that I think EPA certainly feels currently in regard to the local leadership of our community.

I am Mark Schott, and I am President of the Greensboro Jaycees.

The Board of Directors of the Greensboro Jaycees supports the development of an adequate sewer system to serve the Greensboro-Guilford County community needs and rejects the recommendations of the EPA on economical, philosophical and practical grounds.

First, economically, the sewer system will open land surrounding the regional airport to commercial growth which will mean additional jobs created and stabilized by the presence of adequate and attractive commercial property. It should be noted that such property is not attractive to the consuming public as residential property, primarily due to aircraft noise levels.

The former fact is important to us as a group of five hundred young men who live and work now and for the foreseeable future in this area. The second fact has historical proof both here in Greensboro over the last ten years and in numerous communities around the country.

Philosophically, the Jaycees contend that local decisions should be made by local officials who are accountable to the local electorate. Some direction, observation, and, if necessary, supervision should be forthcoming from the Federal level in order to meet standards. We do not feel that this has been the rule on this issue, nor do we feel that any increased involvement by the Federal level of government on this specific issue or pursuant to the establishment of future growth policies for our community have any benefit whatsoever. Our local governments have proved most capable of developing such policy, and have a track record to prove it.

Thirdly, and finally, the Greensboro Jaycees reject the EPA position on practical grounds. We are satisfied, and I think you are also, that projections by both studies indicate the unsuitable qualities of Guilford County soil for widespread septic tank usage.

Additionally, it appears safe to say that the recommended twelve-inch line would have difficulty serving existing development and certainly could not serve even some small additional development which is bound to occur.

To argue that a sewer system or lack of one is sufficient to deflect the established growth patterns of a community is to ignore the personal, practical, economical, and, for the lack of a better word, parochial reasons which cause a person or a business to choose his neighborhood.

For these reasons, the Greensboro Jaycees support the development of a sewer system in the Horsepen Creek basin sufficiently capable of serving today's needs and the needs of tomorrow's growth.

At the same time, we desire zoning standards which will protect the Guilford County environment throughout the majority of the basin for residential growth while making areas adjacent to the airport and major transportation arteries attractive to quality industrial and commercial growth.

This type of impact statement and pre-planning is essential to the orderly and necessary growth of our community if it is to safeguard the "quality of life" which makes Greensboro-Guilford County such an outstanding place to live and work.

More as a footnote than anything else, I might add that I believe I am the fourth Jaycee President to make such a statement on this matter. And in each instance, our organization has reopened our consideration of both sides of this issue, and right or wrong, taken this very same position. Thank you.

CHAIRMAN HARVEY: Thank you, sir.

The panel recognizes Carolyn Allen, President of the League of Women Voters.

MS. ALLEN: Mr. Chairman, members of the panel, I am Carolyn Allen, President of the League of Women Voters of Guilford County.

The League has been involved with the fortunes, and I suppose many here would say "misfortunes" of the Horsepen Creek sewer outfall proposal since

January of 1974, when we took a stand against the project as it was then formulated at a public hearing on the initial Environmental Assessment Statement prepared by Guilford County.

Our organization was sufficiently concerned with the probable negative secondary effects on the Greensboro water supply of urbanization stimulated by the presence of a sewer outfall in the Horsepen basin to join the Environmental Action Coalition as a Plaintiff in the August 1974, suit against the Environmental Protection Agency.

That suit, asking that an Environmental Impact Statement be written on this action, began a chain of events which this hearing represents a culmination. It was, we believe, responsible for slowing the timetable on construction of the proposed outfall.

As a consequence, some have pictured the League of Women Voters as part of a band of obstructionists and rabble rousers who were against motherhood and apple pie, and, more seriously, against growth.

Let me say emphatically the League of Women Voters does not endorse a "no growth" position. Indeed, we believe, as do most of those assembled here tonight, in the growth of many things: knowledge, public participation in government, economic strength, the health and well-being of all citizens, and the improvement of our social and physical environment.

But where one good or desirable end conflicts with another, the League of Women Voters does contend that caution is necessary in relation to short-term gain. When short-term gain may jeopardize a resource without which we cannot long survive--water that is fit to drink--then delay in this project and in any other of similar nature is essential.

Urbanization extracts a toll from the natural world, the size of which we have only recently begun to appreciate. During the months since the inception of this effort by the county, more scientific data has accumulated regarding the effects on water quality of non-point sources of pollution, especially that associated with urban areas.

More information is at hand regarding the deleterious effects of heavy metals and a host of chemical compounds which are being found in city water supplies for the first time. Water quality monitoring techniques are being extended to include new substances which had not previously been recognized as hazards to human health.

The long-term debilitating consequences of some chemicals which accumulate in living tissue have also been identified. Perhaps, most importantly for Guilford County, the Commissioners have, during the past four years, taken certain steps which lay the groundwork for a satisfactory growth management plan. Much remains to be done, but the stated policies of the Guilford County Board of Commissioners acknowledge the need for land use planning to protect fragile environments.

An Open Space Program has been initiated. A "Land Use Goals and Policies" statement has been adopted which indicates a concern for balancing development and environmental protection. Zoning and subdivision ordinances are in effect which should, if consistently applied, lead to a satisfactory population density and appropriate construction and design safeguards in the Horsepen basin.

The County's septic tank ordinance, strictly enforced, will be crucial in sustaining satisfactory water quality as development in that area proceeds. Many of these policies have evolved in the last four years.

For these reasons, the League of Women Voters now favors Alternative 6, modified no action, with its provisions for handling industrial effluent arising in southwest portion of the basin and maintaining the existing collection system in the eastern sector of the basin. Low density residential development will proceed within the statutory guides described above.

As suggested in the excellent section of the Draft EIS on "Mitigating Measures," a system for handling storm water runoff should be initiated and the water quality monitoring system expanded. The inclusion of the County in North Carolina's Wastewater Management 208 Plan, as indicated in Secretary Lee's letter of June, 1978, to Mr. White, Region IV, EPA Director, will also provide guidance to several governmental units facing development in watersheds. This problem is certainly not unique to the Greensboro water supply lakes.

Finally, since the inception of the Horsepen Creek project, action has been taken to extend sewer service to the northeast of Greensboro. More dense development in this area made possible by the availability of sewer lines will relieve somewhat the pressures for growth to the northwest.

In sum, the League of Women Voters believes that the knowledge accumulated and the actions taken by county government during the past four years have increased the likelihood that we may proceed with managed growth in the Horsepen Creek basin, and not in the process, "kill the goose that laid the golden egg" by irreversibly polluting our water supply.

Thank you.

CHAIRMAN HARVEY: Thank you.

The panel recognizes Jack Jezorek.

MR. JEZOREK: I am Jack Jezorek, and I am speaking as a citizen of Guilford County.

A decision on the Horsepen Creek interceptor sewer has been a long time coming. One beneficial aspect of this slow process is that we in the county and EPA have had time to sit back and look at the project a little more closely in order to judge its merits.

For my part, I am just as convinced as ever that this project will do more harm than good; that is, the cost benefit ratio is unfavorable.

The more we learn about the long-term effects of consumption of water with low levels of contaminants, the greater should be our resolve to do everything possible to maintain the purity of our water supply.

Unfortunately, large scale development in the basin will work captive to that good. Hopefully, the fact that EPA has recommended a sewer to serve existing needs plus modest growth, means that they see the necessity for limiting growth in the watershed.

It might be noted here that the 1972, Federal Water Pollution Control Act limits the use of Federal funds to modest growth plus existing needs. This money is not designated by the Congress as a growth stimulator.

Growth limitation is the important point, however. The sewer of and by itself will not cause rapid growth in the basin. County policy is what determines this. Expansion of the tax base and the now shop-worn platitude that "people want to live out there" are not valid reasons for county policy to opt or complete basin development.

We must take a prudent approach, because if we develop heavily and then find our water supply degraded, there is no easy remedy. Purification costs are astronomical.

However, should we limit growth and later find an inexpensive method of purifying our water, or that long-term effects were not as severe as now believed, we can always develop more density later.

My own position remains that the no action or modified no action alternatives are most desirable. I can live with the modest growth alternative, 2E, if I were to see a resolve on the part of the county to operate in this limited growth spirit.

But should the county persist in planning a need for a bigger or a second pipe so that development can proceed fullspeed, then I cannot support this alternative.

The suggestions made by citizen groups and individuals are a good place to start in minimizing the negative impact of development. I recommend that the county seriously consider implementing these and other suggestions to preserve the quality of our drinking water and take strong measures to steer growth to the east of the city.

Thank you.

CHAIRMAN HARVEY: Thank you, sir.

I think it is appropriate at this point to take a brief recess. I intend to recess for approximately five minutes. So, we will stand in recess, then, until 9:15. Thank you.

(A brief recess was taken.)

FURTHER PROCEEDINGS 9:15 p.m.

CHAIRMAN HARVEY: This hearing will come to order.

The panel recognizes Mr. Tom Duckwall. representing the Audubon Society.

MR. DUCKWALL: Thank you, Mr. Harvey.

Mr. Harvey and other members of the panel, actually I am Conservation Chairman for the Local Chapter of the National Audubon Society.

The National Audubon Society is an organization that since the earlier centuries, has solicited the conservation of all wildlife and other natural resources. We work to eliminate unnecessary pollution, unwarranted destruction of essential wildlife habitats, the premature extinction of species, and the waste of our natural wealth in all its forms.

We recognize and expect that for any long-range problem there may be controls or solutions that appear adequate, but in reality they are shortsighted and help to create problems more serious than those we are supposed to deal with.

We are assembled tonight to carry out an important step in working to a solution. In a situation of this type, we have to start by recognizing that the fundamental question is quality of the water supply in a long-term basis for the city and the surrounding areas, rather than how much or what kind of growth an area should have.

So, if there is a real possibility that some activity will reduce that water quality significantly, our plans must either compensate for or reduce that activity to an acceptable level.

It is no secret that when forests and fields become suburban and industrial real estate that normal filtration and absorption functions of the earth is both prevented by buildings and pavement and made more difficult by the presence of grease, gasoline, oil, battery acid, soot and litter. This will occur whether or not the land were near a municipal water intake point. But obviously when this is the case, the choices are much more significant.

For these reasons and because of the cautious attitude toward development into the vicinity of any airport, we recommend that no action be taken that would in the long run tend to create waterfall problems by increasing the urban-type runoff immediately upstream from Lake Brandt.

If this means that certain types of construction must be carefully restricted, we believe this limitation should be accepted by all concerned in the interest of fellow citizens, and that sewage planning should be consistent with the same.

Thank you very much.

CHAIRMAN HARVEY: Thank you, sir.

The panel recognizes Patricia Lutz, representing the Sierra Club.

MS. LUTZ: I am Pat Lutz, and I am Chairperson of the Piedmont-Highpoint Sierra Club.

The Sierra Club has been on record opposing this interceptor line to the Horsepen Creek basin since the initial proposal.

After the Environmental Impact Statement was published, we felt that our concerns and our objections were confirmed. In fact, the water quality is rapidly deteriorating with the amount of development presently found in the basin. The effect of septic tanks,once thought to be the principal source of pollution in that basin, have been shown to be minimum.

Surprisingly, the principal sources of pollution have been due to urbanizations processes itself. Lake Brandt carries a balanced ecosystem at this time with very little ability to absorb additional pollutants. Any change in the present land use pattern will destroy this balance, bringing on eutrophication of the lake and thereby making it unsable for a drinking system.

The pollutants in this case are the nitrogen and phosphorus levels. The concentrations of these chemicals will be increased as the basin becomes urbanized. The eutrophication is being held in check now by sedimentation from agricultural lands. And while sedimentation itself is undesirable, without it Lake Brandt wouldn't be here today.

The Environmental Impact Statement also found that the concentrations of lead in Lake Brandt exceeded the safety regulations for public drinking water supply. These lead concentrations are a direct result of urbanization and the transportation systems that must accompany it.

Lead is a cumulative poison and long-term exposure, even in moderate concentrations, can cause chronic illnesses and perhaps death. The concentrations in our water supply are already dangerous, and further urbanization would bring more of these exotic chemicals into the water supply.

To ignore this concept which is so clearly stated in the Environmental Impact Statement is almost criminal, and the effects will be felt by our citizens for years and years to come.

We have highlighted only a few of the problems that concern us about this proposal. But we feel that these illustrate our position.

The lasting effects of a mistake at this juncture in time makes this proposal something more than a mere interceptor line. And for that reason, we recommend that Alternative 5 or 6 be accepted.

We also urge the EPA to accept the data reflected in the Environmental Impact Statement in their decision making process. These data, gathered by an unbiased study group, with no contractual agreements in Guilford County, would seem to be the most credible.

Our water supply problems are already legendary. We must not destroy what we have. The Sierra Club has operated for many years with a motto that is very appropriate for this issue:

". . .Not blind opposition to progress,
but opposition to blind progress."

CHAIRMAN HARVEY: Thank you very much.

The panel recognizes Mazie J. Levenson.

MS. LEVENSON: Mr. Chairman and members of the panel, I speak as a private citizen; one who has been interested in watching our county grow and the many improvements being made in it for over twenty-five years in this area.

I, too, take a great deal of pride in the policy of the people that are attracted to serve on our City Council and on our County Government and also high caliber professional staff which we have.

So, it is knowing some of our staff and some of the problems that they have been working with that I have become interested in this problem. I would first of all like to say that as citizens, we are most grateful to the EPA for the studies necessary to compile this particular Environmental Impact Statement, for it points out the interrelationships between water quality and urbanizing lands adjacent to the water reservoir.

This document plainly states that it is not possible to have a future population of 18,000 in the Horsepen Creek basin without deterioration of the Lake Brandt reservoir.

Now, we know that the last reservoir which Greensboro completed took 13 years from its inception to its completion. And it is with that in mind that we do not feel that we can see the quick deterioration of Lake Brandt.

This is especially so since we are not aware that either the county government or city government are presently acquiring lands for new reservoirs.

We are glad that considerable space was

devoted in this document to measures which can be taken to lessen the impact of urbanization on the water quality in Lake Brandt.

I have read a number of pamphlets and bulletins on water quality, but never have I seen it indicated so plainly which measures could be taken to lessen the impact of urbanization on water quality. To me, a lay reader, I thought this was laid out in very explicit terms.

We know there are many adverse effects in increased development in the Horsepen Creek basin on Lake Brandt. The Lake will have a heavier load with metals and phosphorus. The increased runoff from driveways, highways and yards will bring more sediment into the Lake and more diverse pollutants.

As more organic material washes to the Lake, problems of odor and taste will occur. But this deterioration in water quality can be lessened by instituting certain preventive measures as outlined in this Draft for the Environmental Impact Statement.

First, the water monitoring program for Horsepen Creek and Lake Brandt must begin. We have not had such monitoring systems. Such a monitoring system would give early warning of problem areas where pollutants will be entering the streams which feed Lake

Brandt, and would allow preventive measures to be taken early.

Guilford County has no regulations regarding storm management. And this is in spite of the fact that storm management regulations were introduced about a year and a half ago, but were defeated. So, we now learn that stormwater regulations are needed to lessen the pollutant loads into the reservoir in order to slow down the runoff water and to allow more infiltration into the ground.

Strict enforcement of the septic tank ordinances should always be done, and we hope has been done in this county. But this document outlines even more forcefully that strict enforcement of the septic tank ordinance must be enforced to see that the lands which do not percolate properly are denied permits, and that septic tanks are properly located and installed.

When overflow sanitary sewage occurs, a health hazard exists. With the Horsepen Creek sewer and the watershed, future tie-ins to the interceptor must not be allowed to exceed the capacity of the design. This must require legal descriptions. I am not aware that any legal descriptions would have to be written in for this specific interceptor.

This documents makes reference many times to the necessity for good land use controls in areas which are becoming urbanized. We commend our Guilford County Commissioners and the Planning Department for their policy guidelines under the title "Land Use Goals and Policies."

This publication sets forth excellent goals, but to implement these goals requires both adequate staff and money. Presently the Guilford County planning staff is lacking personnel in several top positions. This shortage of professional staff jeopardizes the accurate supervision and coordination of planning functions.

But more importantly, a shortage of staff means a lack of time for planning for future land development. Under Guilford County's Open Space Program, it is most important that monies continue to be appropriated for the environmentally sensitive areas. Some of these areas will be in the watershed, and their careful management will contribute to the maintenance of good quality water.

This Draft for the Environmental Impact Statement for the Horsepen Creek interceptor clearly states that adequate land use controls are essential for the development of any alternative which is selected for the development of the Horsepen Creek basin.

Inasmuch as Alternative 2E would allow improvements in the present situation, yet slow down urban growth, I would favor this Alternative. Again, we thank the EPA for this document and the mitigating measures outlined for protecting the Lake Brandt reservoir and its water.

Thank you.

CHAIRMAN HARVEY: Thank you.

The panel recognizes Frank York, President of the Greensboro-High Point Homebuilders.

MR. YORK: Mr. Chairman, there have been some very good speeches made on both sides tonight, so I will make mine short.

I am President of the Greensboro-Highpoint Homebuilders Association, which includes Guilford County. This Association feels that it is very important to have an adequate sewer line in this basin for future growth, because there will be houses built in this area.

There are going to be babies born, and we have got to have housing for them. It is our opinion that houses built in this area served by this outfall would be better for the environment than septic tanks.

We urge you to consider the city and county's request for adequate lines to fill these needs.

Thank you.

CHAIRMAN HARVEY: Thank you, sir.

The panel recognizes Hal B. Lewis.

MR. LEWIS: I requested to be last. I hope this is the last speaker.

CHAIRMAN HARVEY: Not quite, sir.

MR. LEWIS: Mr. Chairman, members of the panel, my name is Hal Lewis. I appear before you as a beleagured poor taxpayer, and somehow I feel like whatever happens here tonight, I am going to pay for it way or the other.

I support your conclusion of 2E for a twelve-inch line. Now, I gave you a prepared statement which I won't read from. I would like to comment on something which hasn't been brought out adequately tonight, and that is the reason for the twelve-inch line.

If you refer to the paper, the second reason--I shall read:

> ". . .interceptors are being built so as to service potential growth far into the future; the median design year of the projects reviewed was over 50 years, with a mean of 105 years. In one case in fact, the interceptor would support growth for over 2000 years based on past growth trends. Furthermore, assuming that demand for

sewage services grows at 3 percent a year and future construction costs double, the study demonstrates that building for a 25-year design period is more economic for a 50-year design period."

In other words, it cost more to build for a long range than it does to put in two parallel lines. Now, this is a point we have all missed here tonight. Everybody is pleading for a large line for the future. And as a taxpayer, I am here to tell you that I have no obligation to the citizens residing in this county in the year 2025. I believe in pay as you go.

If the citizens in 2025, want to build a 16-inch sewer line, let them build and pay for it. So, I will support you in your 2E Alternative.

Thank you.

CHAIRMAN HARVEY: Thank you, sir.

The panel recognizes Roger Sekadlo, Executive Director of the Airport Authority.

MR. SEKADLO: Mr. Sekadlo has left. I am Stanley Frank, Chairman of the Greensboro-High Point Airport Authority.

My remarks are going to be brief. I would like to say that to my knowledge Radian has never been to the airport to get any data from us. I have little technical knowledge. However, I can say no one can control the air traffic and usage by the public, and that is quite evident by the growth that we have in the last year to year and a half in air traffic throughout the United States.

We will need sewer service without a doubt. Certainly a system that provides for little or no growth is inconceivable and a waste of funds.

I urge that a plan be approved that will provide for reasonable and orderly growth. Certainly the Horsepen Creek line properly sized will meet the above needs.

The Airport is growing at the rate of about 13 percent per year. We anticipate a flow after the new terminal, which is being constructed, of more than 60,000 gallons per day, certainly by 1985. And by 1995, we estimate 153,000 gallons per day.

The Airport's needs must be properly provided for. And certainly you should take this into consideration.

Thank you.

CHAIRMAN HARVEY: Thank you, sir.

Is there anyone else who desires to offer comments to the panel? If you would, please go to the microphone and state your name and whom you are representing, if anyone, please?

MR. SHAW: Sir, my name is Ray Shaw. I am with the City of Greensboro. I do not have a prepared presentation. I would just like to make a couple of comments which we have alluded on several occasions tonight, the lead loadings in Lake Brandt.

I am afraid that we have been maybe a little bit guilty of picking in the fruit basket what we wish to come up with, and if I might also be granted that privilege, I would like to pick in that same fruit basket for a few items from the Radian report.

I would like to set for once and for all the feeling of people to rest that Lake Brandt is not filling up with lead. Fish are not going to the bottom as a result of excessive waste and taking on lead that is in the waters of Lake Brandt.

The Radian report quite clearly states that a reliable estimate of annual lead loading to Lake Brandt under existing conditions could not be obtained due to the high variability of the measured concentrations.

They do go on to say that by their methodology they do estimate lead could increase approximately twenty percent over the levels which were measured during their study.

In addition to that, they also make the statement that it is likely that the greater developed acreage that is hypothesized in the septic tank scenario will produce higher lead yeilds than the sanitary sewer scenario.

However, with the existing data, it cannot be conclusively stated that there will be any significant difference in lead yields between the two types of development.

In addition to that, this report completely ignores existing technology which is available on the capability of water plants to remove heavy metals. This technology is available from EPA in a very fine document that has been out, as far as I know, approximately two and a half to three years.

They do not adequately deal with the fact that the lead that is in the lake in all probability is being recycled from the bottom deposits during chemically reducing seasons of the year which occur annually, nor do they adequately deal, although it has been alluded to tonight, to the fact that probably in another five to ten years we will all be driving automobiles with no lead in the gas. And if the source of the lead, which they state they do not know where the source of the lead or the arsenic comes, from, if it is indeed related to transportation, then I think that we can feel that within the next few years, irrespective of development, if the source of lead does come from leaded gasoline, there would be even less lead.

The samples which have been taken from our drinking water supply, analyzed by the city, analyzed by the Environmental Protection Agency, and analyzed by the laboratories of the State of North Carolina, have never indicated any lead concentrations in excess of those outlined in the Interim Primary Drinking Water Standards.

Thank you.

CHAIRMAN HARVEY: Thank you very much, Mr. Shaw.

Is there anyone else who wishes to offer testimony to the panel?

(No response.)

CHAIRMAN HARVEY: Apparently not.

I wish to thank everyone who testified this evening for their testimony. Your comments will be carefully considered and responded to in the Final Environmental Impact Statement.

Your comments will be a major determining factor in the project alternative to be recommended for funding, as both the Environmental Protection Agency and the state place great importance on the desires of the community.

With regard to procedural matters, I wish to remind you that the record will remain open for an additional fifteen days if you wish to submit further written comment.

The final EIS will take a minimum of 60 days to complete. Upon completion, the document will be filed with the Environmental Protection Agency, Office of Federal Activities, and made available to the public.

Those of you who have commented tonight or submit comments will receive a copy of the Final Environmental Impact Statement.

Again, the Environmental Protection Agency and the State of North Carolina wish to thank you for attending this public hearing and participating in the process.

I extend my personal thanks for all the kindness shown to the members of EPA's Region IV staff, and I am sure Mr. McRorie joins me in that. We appreciate it very much. Thank you and good evening.

(Whereupon, at 9:50 p.m., the proceeding in the above-entitled matter was closed.)

CERTIFICATE

I, Jo B. Bush, do hereby certify that the foregoing pages 1 through 80 are a true and accurate record of the proceedings on Monday, November 20, 1978, in Greensboro, North Carolina, for the public hearing on the Greensboro-Guilford County, North Carolina Horsepen Creek Interceptor.

JO B. BUSH, CVR
OFFICIAL REPORTER